

DOCUMENT RESUME

ED 240 977

IR 010 967

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TITLE The Implications for the Open University of Recent Cable and Satellite Developments. A Discussion Paper.
PUB DATE [83]
NOTE 102p.; Appendices may not reproduce clearly due to use of colored paper.
PUB TYPE Viewpoints (120) -- Reports - Evaluative/Feasibility (142)
EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS *Cable Television; *Delivery Systems; Distance Education; *Educational Television; Foreign Countries; Information Networks; Institutional Cooperation; *Open Universities; Postsecondary Education; Program Development; Program Implementation; *Programing (Broadcast)
IDENTIFIERS *United Kingdom

ABSTRACT

Designed to raise awareness of the implications of cable television and satellites for the Open University, this paper indicates why cable television developments will affect the university and the wide range of university people and departments who will be affected by such developments. Four main issues that the university will have to deal with are addressed: (1) general educational potential of cable and satellite technology; (2) Open University policy issues; (3) national policy and the Open University's possible involvement in influencing national policy; and (4) how the Open University might develop its policies. The issues are further developed by appendices covering the following topics: setting the scene; history of cable in the United Kingdom (UK); technical details of cable and satellite television in the UK; general educational potential of broadband cable technology; relative advantages/disadvantages of broadband cable over other video technologies; broadband cable and interactivity; possible Open University programming initiatives; an Open University educational channel; regional implications; and collaboration with other institutions. (LMM)

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THE IMPLICATIONS FOR THE OPEN UNIVERSITY OF RECENT
CABLE AND SATELLITE DEVELOPMENTS

- a discussion paper -

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"It appears to us that adequate provision has not been made in the past for the organised recognition of facts and information, and for the systematic application of thought, as preliminary to the settlement of policy and its subsequent administration".

Haldane Committee on the Machinery of Government, 1918.

WHY WORRY? AND WHY NOW?

Will cable TV really make much difference to the OU? After all, we have a combination of national broadcasting and an expanding video-cassette distribution system. Cable will be local. And what's the rush, since the earliest date that new cable TV systems are likely to be in operation is late 1985, and the British Direct Broadcasting Satellite will not be launched until 1986? Why not just wait and see what happens, and respond to real rather than hypothetical issues?

Unfortunately, decisions about the framework of cable television are being made now, and these could have a profound effect on the very future of the Open University, no less. Approaches have already been made to various parts of the OU/BBC system about possible "deals"; government legislation within the next three to six months will set the pattern for the next 20 years. Now is not too soon for the University to face up to the implications of cable TV and satellites.

In the spirit of Lord Haldane's comments, we believe that before policy can be settled, an understanding of the issues is necessary. This requires a process of education which is beyond the scope of a paper of this kind. What we are aiming to do here is to set the ball rolling: to raise awareness of the issues and as individuals to stimulate the corporate body of the University to consider how best to deal with the issues that we are raising. We would like to make it clear that while we each have our own opinions, we believe that many of the issues are so fundamental that widespread discussion and debate of these issues within the University is essential.

Organisation of the Paper

This paper is organised therefore in such a way as to pull out the main issues. We start by indicating why cable developments will affect the University, and by indicating the wide range of people and departments in the University that will be affected by such developments. There follows a section which attempts to pull out the main issues, with a brief paragraph on each issue. Separately, you will find in Appendices further development of some of these issues, plus a number of papers giving more detailed information. Lastly, in this main paper, we set out a proposed strategy for dealing with these issues.

How Could Cable Developments Affect OU Operations?

We do not have a crystal ball. We cannot anticipate government intentions nor commercial decision-making. A change of government might radically change the situation. However, we can make some informed guesses about what will be possible, given current government thinking, and current commercial considerations. Therefore, to give an idea of why the University needs a policy towards cable and satellite, we put forward five examples of some of the issues we might well face:

Question 1

How does the OU respond to an approach from a Milton Keynes pay television operator which proposes

- a) offering existing OU courses as an additional service to its subscribers;
- b) offering access to the cable in Milton Keynes for prototype courses and other OU media projects;
- c) to commission local interest/education programmes from the BBC/OU?

Question 2

A staff tutor in Leeds and a department at Leeds University wish to re-configure a CE course by giving the television component a local relevance, and by condensing the existing text into fact sheets. This package would be sold to the Leeds cable company who in turn would offer it on a pay-per-view basis to subscribers. How does the OU respond and which academic and administrative sections need to be involved?

Question 3

What is the OU's response to an international company that wishes to purchase the cable transmission rights to OU material in order to sell them to cable and satellite operators around the country and the world?

Question 4

Should the OU encourage the development of a consortium which would lobby, develop and offer products to cable companies? If so, how?

Question 5

A cable company bidding for a number of franchises around the country approaches the OU suggesting that our course material be made available alongside that from other education institutions and offered free to all the cable companies for transmission on an education channel which would be part of the basic cable package to subscribers (i.e. at no extra cost). How should the OU respond? Should it make programmes available free of charge? If not, who should decide charges and/or negotiate the agreement?

Question 6

A consortium of conventional universities decides to make available some of their undergraduate courses to part-time off-campus students, teaching locally via cable. This radically affects recruitment to certain OU courses. What should be the OU's response?

In at least one example, this has already happened. The likelihood that one or more of the other situations will arise within the next five years is very high. The last 18 months has seen the Government move with breakneck speed first to investigate the Information Technology potential of cable (I.T.A.P.) then to investigate the implications of broadcasting policy (Hunt), and by the end of 1983 it is possible that legislation will have been through Parliament and the 'cable revolution' will begin to be a reality.

There has been very limited opportunity to discuss in open debate the socially most appropriate mode of development of cable technology - for what social purpose is cabling deemed to be a good thing? What kind of cabling best serves that purpose? Is public ownership preferable to private ownership in pursuing these purposes?

Instead we are faced with the prospect of a virtual fait-accompli - that cabling will proceed on a laissez-faire commercial, entertainment-led basis, with entrepreneurs being able to decide which parts of the country they will cable up and which kinds of cable they want to use in their areas. Whether cable systems are developed and ultimately whether they survive is to be left to market forces. Programming policy would be subject to the same forces.

Some commentators believe that this will result in local cable services buying-in complete channel "packages" from national or multi-national companies, with very little local programming. Having said this, the potential of cable for education programming offers the OU great potential as a programme provider alone, as a member of an education consortium, or as a consultant or coordinator of various local initiatives.

In Appendix 1, we give a brief summary of the chief events and decisions regarding the future of cable in the U.K. over the last 12 months, and in Appendix 2 there is a short history of cable in the U.K. Appendix 3 contains a brief glossary, and a technical description by the IBA of cable systems in the U.K.

KEY ISSUES FOR THE OPEN UNIVERSITY

In this section, we merely raise each issue, with a brief comment, usually followed by a reference to more detailed discussion in an appendix. There are basically four main issues raised:

1. General educational benefits - or the potential - of cable and satellite technology.
2. Open University policy issues
3. National policy and the OU's possible involvement in influencing national policy.
4. How the OU might develop its policies.

MAIN ISSUE

COMMENT

1. General educational potential of cable

- i. What are the advantages for education of broadband cable technology and of associated television networks?

This is a complex issue, which is dealt with in full in APPENDIX 4. The main advantages suggested are:

- more time available for ETV
- improved facilities for local programming
- more scope for experiment
- multiple sound tracks for the same programme
- channels dedicated solely to educational use
- better transmission times
- more specifically targeted programming
- choice of networked or local educational programmes
- access to more potential students.

Whether or not these potential benefits materialise will depend partly on political factors, partly on technological decisions, and partly on the ability of the OU and other educational institutions to seize the opportunities.

- ii. What are the relative advantages of broadband cable over other video technologies?

Another complex issue! This is summarised in APPENDIX 5, which compares cable with off-air transmission, video-cassettes, satellite and video disc. Generally, cable would complement rather than replace other video technologies. Its main disadvantage is that it will cover no more than 50% of the country by the year 2000 at the earliest, yet it may put increased pressure on the BBC to remove the OU from the national broadcast transmissions.

- iii. How much interactivity will there be, and what form will it take?

This will depend on the technology installed and the decisions made for commercial reasons. APPENDIX 6 discusses the levels of interactivity possible and likely. It seems that sophisticated interaction is unlikely to be available in the next five years.

2. Open University Policy Issues

i. What kind of programming initiatives might the Open University take in relation to cable?

- who would decide on this?
- what would be the role of course teams in such programming?
- what would be the role of the regions?

There is a wide range of possibilities:

- completely new courses, either national, regional, local, CE, undergraduate or postgraduate;
- new courses based on repackaged existing materials
- adaption of existing materials for local use
- "one-off" or "extra" showings of broadcast OU programmes on local stations
- pilot and innovative projects, interfacing cable with other technologies (e.g. microcomputers)
- development of videotex information (up-dating students and tutors)

These are discussed in some detail in APPENDIX 7.

ii. Should the Open University try to get its own dedicated channel?

The advantages if doing this are set out in APPENDIX 8. In short, the advantages would be:

- collaboration with other educational institutions;
- better integration with other media;
- greater control over use, hours of transmission, and scheduling;
- easier to experiment with other related technologies via cable
- prestige: keeping the OU's lead in use of technology for distance education;
- increased revenue and students.

The main difficulties would be: getting such a dedicated channel - although the shortage of appropriate programme material from other sources is a powerful argument in our favour; and organising ourselves to negotiate and collaborate with other institutions.

iii. What are the implications for the regions?

- should regional initiatives be approved centrally? If so, why, how and who?

There will be considerable scope for regional initiatives with regard to cable. These implications are detailed more fully in APPENDIX 9, including a suggestion about how such initiatives might be encouraged, funded and co-ordinated.

iv. Collaboration with other institutions: some implications

- what policy should the OU have?
- who should set the policy?
- who should negotiate and administer it?

If there is to be no OU-controlled educational channel, cable is likely to lead to a competitive situation with other institutions for off-campus students. This could well lead to a substantial loss of OU students to other institutions. Collaboration would avoid or reduce the effects of such competition. The advent of cable will require the OU to act with considerable deftness and skill with regard to collaboration with other institutions. The issues are dealt with more fully in APPENDIX 10.

v. What control should the OU exercise over production of cable programme material carrying the OU imprimatur?

- can OUEE Ltd., commission material from other production agencies in the OU's name?
- what control, if any, would the OU want over programmes specially made for cable?
- what control, if any, would the OU want over BBC/OUNP regarding production of cable material for other agencies than the OU?
- what control, if any, would the OU want over collaborative production (i.e. material produced by another institution as part of a local "OU" offering?)

Programmes going out on the cable under the label "OU" could originate from a number of sources:

- the local cable stations own production facilities
- another collaborating institutions' production facilities (e.g. another University)
- programmes made by BBC/OUNP specially for cable
- existing broadcast or cassetted programmes used in whole or in part within a local cable offering

Whatever policies are decided, they will have financial, copyright, marketing, and intellectual ownership implications, some of which are dealt with more fully below. It is clear though that unless committees such as BAVC and the Board of OUEE Ltd., were willing to accept a greatly increased work-load in the future, the OU's current decision-making machinery would be inadequate, if there should be plethora of cable initiatives, and if some form of control was considered necessary.

vi. What control should there be about the way OU material is packaged and distributed by a cable operator?

- what role or rights would a course team have in any such deal?

vii. What should the OU's policy be regarding pricing?

viii. What should the OU's policy be regarding charges to students?

The OU will need to consider in any deal with a cable operator or consortium, whether it wants to get agreement on appropriate timings of transmission, adequate local liaison before transmission, publicity/promotional slots for the OU, whether advertising can be inserted within or between programmes, the time limit of an agreement, and the number of times the material can be used. If charges are to be made (see vi below), they will need to cover OU administration and operations, such as copyright release, taping and copying, delivery and local liaison.

There is a number of alternative policies. If there was to be a dedicated educational channel offered free of charge, with satisfactory arrangements for the distribution of a substantial amount of OU material, should - or could - the OU make programme material available free of charge to an operator? Alternatively, what should the OU charge for use of its programmes? Who would decide the rate and collect this, and what would happen to the money, especially since it might be possible to offer self or part-financing courses, either through charges to a cable operator, or through charges directly to students? Also any deal should not preclude alternative forms of distributing OU material, such as off-air transmission and cassette distribution.

There are several ways in which cable services can be financed: through local advertising; through connection fees; through a standard rental, covering all services; through an additional rental, for "special" channels; through pay-per-view. Currently students do not have to pay to receive off-air transmission of OU broadcasts; they do not even have to pay for video cassette distribution, unless they decide to rent a private machine. On the other hand, CE-type courses could be offered via cable on a self-financing basis, if pay-per-view or special rental for an educational channel was levied. Again, a number of different "deals" are possible - such as offering programmes free to a cable operator, with the OU negotiating appropriate times and packaging for an educational channel available free to all subscribers. Should such deals be determined solely by commercial issues, or should educational issues be paramount?

- ix. Should the OU negotiate nationally or individually with cable operators?

The OU is unique among educational institutions. It has a vast stock of excellent programme material, and operates nationally. It is likely that many cable operators will in fact be subsidiaries of national companies or consortia. Negotiating nationally might provide better coverage, easier administration, and better financial returns. On the other hand, it could stifle local initiatives. Any deal - national or local - should also not preclude the possibility of evaluation by the OU.

- x. Copyright and royalties
- the existing situation

The OU is very badly placed with regard to cable copyright issues. The current situation is that programme contracts last for four years, with an option for renewal, covering up to two broadcast transmissions a year. Registered OU students are allowed to use video recordings of programmes for private study purposes only. Any other use must be licensed and paid for. The licence situation is extremely complicated in that while the OU (not the BBC) owns the copyright of existing OU TV programmes, sales of programmes, licence money and fees for recording OU programmes by other agencies are the responsibility of OUEE Ltd. In turn, OUEE Ltd. has sub-contracted all sales of A/V materials to a private company, Guild Sound and Vision Ltd. This means that no OU employee, neither regional nor central, may give permission for the use, in whole or part, of any existing OU programme for distribution by cable. Presumably only Guild Sound and Vision can give such permission. OU employees both regionally and centrally need to be given clear instructions about the copyright situation regarding the use of existing programmes on cable. Furthermore, the University needs as a matter of priority, to review its sales and copyright agreements with OUEE Ltd., in respect of cable use of existing programmes. It seems that in practice, Guild Sound and Vision Ltd., hold rights of all OU programmes! The University needs to decide a policy regarding rights and royalties of programmes made for broadcasting (or as video-cassettes), which also covers potential use on cable. Too restrictive a copyright policy may prevent use of OU programmes on cable; too lenient a policy will result in the OU foregoing income and not protecting contributors.

- future OU programmes made for broadcasting or cassette distribution
- programmes made specially for cable: OU material

Let us take a case of a regional member or staff who makes a programme for OU students to be used on his local cable network. Who

- who should negotiate cable rights and royalties? OU? BBC/OUN? OUEE Ltd? or Guild Sound and Vision?

would own the copyright? Who would the regional member of staff contact regarding these issues? What sort of contract should be drawn up? For such locally generated programmes, should there be a more lenient copyright policy? Should such a policy be centralised, or left to local regions or even individual members of staff? Should contracts be drawn up in such a way that OU cable programmes can be used by other cable stations anywhere in the country without copyright restrictions or not? Many OU staff may feel that these involve policy issues much broader than the legal issues. How can these issues best be handled within the OU?

3. National Policy

- i. Does the OU still wish to influence national cable policy?

There is still time to influence some of the major international policy decisions regarding cable. A White Paper is to be put before Parliament in March or April, 1983, with a bill in the next session. However, for the OU to have any influence, it will need to move fast, and skilfully. Some of the issues on which the OU may wish to contribute are listed below.

- ii. Regulation and education

At the moment, there is no statutory obligation for any cable operator to carry educational or community programmes. In this aspect, the UK will be at variance with practically every other developed country with cable systems. Since there will have to be a regulatory body to award franchises for cable operation, it would be easy to insist that each station sets aside one channel for educational and community use, and to enforce this. Without such regulation, the OU could easily be shut out of all cable distribution. Also does the OU wish to be represented on any national regulatory body?

- iii. National grid or local networks

The current proposals are based on the establishment of independent, local systems. Although a system may develop where large companies or consortia operate several stations, there is no guarantee that a national network will develop, and if it does, under current proposals, it would develop very slowly. This would mean that it would be impossible for the OU to have a national distribution system via cable, at least this century, nor could it transfer programmes from one area to another via cable. Does the OU want a national network, or the ability to move programmes/data round the country via cable? Or would it actually protect its access to national

broadcasting if cable was only a local service?

- iv. Fibre optic or co-axial cable?
(see Appendix 3 for technical explanation)

It appears that at the moment, to get cable spreading quickly, the government will allow the establishment of cable networks based on co-axial cable technology, because this at the moment is available, and cheaper to lay in the short-term. Fibre-optic cable however, has three advantages over co-axial for the OU:

- (a) it has the capacity to carry many more channels than co-axial (thus presumably making it easier for the OU to get access);
- (b) two-way communication, with data sent back from the user to the head-end (or other users) would be more economically feasible via fibre-optic cable (this clearly is more valuable educationally than one-way communication via co-axial);
- (c) fibre-optic cable allows the establishment of interactive networks, so that for instance OU students and tutors - or different students - in different parts of the country could communicate with each other (see "Star" or "Trunk and Branch" below).

- v. Star or trunk and branch?

Even if fibre-optic cable was used, a decision needs to be made regarding the type of distribution system set up. Co-axial cable uses a "trunk and branch" system. This means that cable runs along a street, and "branches" come off this to each house. Every user therefore has the same limited choice of cable channel on this system, and there is no chance to communicate back from the receiving end. Fibre-optic cable, however, would allow a user to "dial up" a whole range of channels, from anywhere in the country, and also be contacted by any other user - in the same way as the telephone system operates. A "Star system" again would be much more flexible for OU purposes, but is much more expensive to set up than a trunk and branch system, because of the need for "exchanges". It would however, substantially increase the opportunities for interactivity.

- vi. Social equity

The current government policy is to allow market forces to determine where cable systems will develop. On this basis, even the more optimistic estimates are that less than 50% of the country will be cabled by the end of the century, and remote and thinly populated areas may never be economically viable for cabling. Many low income families in inner-city areas may also be unable to afford connection and rental charges. If the OU was to use cable therefore, this would disenfranchise many of its students. National

broadcasting organisations - and until recently the telephone system - have had an obligation though to provide national coverage as a main priority. It would be possible to set such a priority for cable systems, by a levy on profits from the highly profitable areas (i.e. suburban and city areas) to be ploughed back into cabling for less profitable areas, or for free connection services. Is this a policy which the OU wishes to support, in order for all students to benefit from cabling? Or will the OU wish - on grounds of equality - to abstain from the use of cable where it exists?

vii. Liaison with other educational bodies

If the OU does wish to influence national policy, would it be best to act singly or in conjunction with other educational and community bodies, such as the Council for Educational Technology, the Educational Television Association, and the various associations of local authorities? (See Appendix II for other organisations' responses to the Hunt report) If there is to be liaison, the OU needs to act very quickly indeed.

viii. If the OU is to attempt to influence national policy, how should it do this?

If the OU is to influence national policy, more than a letter from the VC to the Home Office is needed. There has been virtually no discussion or even mention of educational issues in Parliament; there is no education lobby for cable (a very marked contrast with USA and Canada, where educators have been extremely successful). M.P.'s could be lobbied; a press campaign could be coordinated; friends in the House of Lords could be approached. Who would organise this in the time available?

4. How the University might develop its policies

i. Handling cable initiatives

Cable TV has the dubious privilege of cutting across the University's decision-making structure more thoroughly than even Information Technology. With that example in mind, it is hard to be sanguine about a coherent University policy response to cable TV. However, we can but try.

The most obvious place to discuss general policy issues is the Media Policy Advisory Group, since its brief does include televisual media as well as information technology. As regards the place where specific initiatives should be approved, we could consider all cable TV programme initiatives as mini-courses (even if there was no written material), and use the existing CE course approval mechanism.

Alternatively, for the first year or two, we could consider the establishment of a Steering Committee on Cable Initiatives, consisting of representatives from Faculties, CE, BBC/OUP, OUEE Ltd., and the regions, to which all cable initiatives would initially have to be referred, to establish policy and "case-law". This may have an inhibiting effect on the first year or so, and may be difficult to police, particularly at a regional level, but there are doubts whether the existing CE course approval mechanism would exercise sufficient control, and we hope by now that it is clear that an ad-hoc laissez-faire approach to cable could lead to chaos. We are not going to be involved in interactive courses for several years, so that we can defer firm decisions on how to handle specific initiatives in that area. It is more important to ensure a coherent plan for the development of interactive services, and this will require the attention of the two Computing Steering Groups, in conjunction with MPAG.

ii. Handling the paper

We have widely circulated this paper. Since many parts of the University are affected, and since it raises academic and regional as well as administrative and financial issues, we believe the implications of cable development for the OU to be a Senate issue. We have therefore asked Senate Agenda Committee to advise on how this paper should be discussed within the University.

Summary

Perhaps of all the challenges and problems that the advent of cable will bring for the OU we think that the most difficult will be devising a system of effective policy and decision-making in this area which provides sensible guidelines without stifling initiative.

We hope to have demonstrated though that whether or not the OU wishes to use cable it will have to respond to the challenge. If it does not cable could provide a serious alternative to the OU for off-campus part-time students, and this could have major adverse effects on recruitment. There is still time for the OU to influence national and government policy, to ensure that cable can serve the needs - not only of the OU but of education in general, but if it is to do so, the OU needs to act very quickly. The worst possible course, with regard to both national issues and the OU's own response to cable, would be to do nothing now.

THE IMPLICATIONS FOR THE OPEN UNIVERSITY OF RECENT
CABLE AND SATELLITE DEVELOPMENTS

- Appendices -

1. Setting the Scene.
2. A Brief History of Cable in the UK.
3. Brief Technical Details of Cable and Satellite TV in the UK.
4. The General Educational Potential of Broadband Cable Technology (including brief descriptions of some existing cable education networks).
5. Relative Advantages/Disadvantages of Broadband Cable over other Video Technologies.
6. Broadband Cable and Interactivity
7. Possible OU Programming Initiatives
8. An OU Educational Channel?
9. Regional Implications
10. Collaboration with Other Institutions: Some Implications.
11. Other (Relevant) Responses to Hunt Committee

APPENDIX 1

SETTING THE SCENE

A brief summary of the chief events and discussions, 1982-83

The following is intended as a brief summary of the chief 1982 events and decisions as of end of January 1983.

1. 4th March 1982. Home Secretary announced Britain would start Direct Broadcasting by satellite (DBS) in 1986, allocating the first two spare channels to BBC. The BBC announces one subscription channel showing a blend of films and special events (concerts, sport, drama and archive), and one channel showing the best of TV programmes from around the world - Window on the World.
2. March 1982. Government's Cabinet Information Technology Advisory Panel (ITAP) Report. Calls for rapid decisions to enable cabling up of UK financed by private sector as part of drive towards "Information Technology" (IT).
3. 22nd March 1982. Government sets up 3-man Hunt Committee to examine the implications of cable proposals in ITAP especially as regards effects on broadcasting.
4. 12th October 1982. 'Report of the Enquiry into Cable Expansion and Broadcasting Policy' (Hunt Report).
5. 23rd November 1982. House of Lords debate on subject.
6. 23rd November 1982. Part Committee Report on Satellite Technical Standards. Favours MAC (Multiplexed Analogue Component) rather than extended PAL (Phase Alternating Line) system. The former supported by IBA, the latter by BBC. Eight days later the Home Secretary accepts Part Committee recommendations.
7. 2nd December 1982. House of Commons Broadcasting (Cable Systems) debate. Home Secretary generally supports Hunt Report and promises White Paper in early 1983 (possibly February or March).
8. 8th December 1982. Prime Minister at I.T. conference reiterating Government's intention to press ahead with cable plans.

9. January 1983. OU announces involvement with institutions in Austria, Denmark, and West Germany coordinated through Council of Europe for distribution of 13 teaching units of adult education programmes via satellite due for launch in 1985.
10. January 1983. Merseyside Cablevision, a Liverpool based consortium sent a pre-franchise application to the Home Office. Four programming areas, local or social, educational and entertainment, using a 30 channel hybrid B.T. interactive tree and multi-star networks. Costs £5-10 million. Expected penetration 18%, charging £10-£15/month.
11. January 1983. Conference at ICA of representatives from educational and voluntary organisations, to discuss implications of cable. One speaker (John Howkins) predicted that cable programming will be nationally organised and financed, with limited local programming, on cost grounds. Concern that lack of regulation will inhibit educational and community use.

Important Hunt Committee Recommendations

- a) Minimum of constraint for maximum variety
- b) Need for innovation, experiment and sensitivity
- c) Four elements -
 - i) cable providers: the installer and owner of the physical infrastructure;
 - ii) cable operator: the manager of a local cable system who puts together a package of cable services to sell to customers, from whom he collects revenue;
 - iii) programme or service provider: the assembler of programmes into channels or segments of channels for sale to cable operators, or the provider of other services;
 - iv) the programme maker
- d) Cable services must carry BBC and ITV programmes and future DBS services

- e) Major national sporting occasions to be protected for all viewers
- f) No "pay-per-view" operations, which would prevent operators charging for individual programmes/series.
- g) New cable authority to be set up to award local franchises and monitor operators' performance. Franchise areas no bigger than half-million homes
- h) No regulation on programme range or balance.
- i) Cable operators to be under the same obligations as the BBC and ITV on matters of taste and decency, but adult material could be available on special subscription.
- j) No immediate quota on the number of foreign programmes.
- k) No political organisations, local authorities or religious groups to control channels.
- l) Ten-year initial franchise period.
- m) Cable to carry advertising and possibly sponsored programmes.
- n) No limit to the number of new programme channels for cable
- o) No obligation for community programming and local access programmes (but there should be 'a presumption that these be provided')

Notes

- 1) In the 2nd December House of Commons debate the Home Secretary confirmed a new authority would be set up and that it would not be 'toothless'. It would be able to give (and withdraw) franchises, as well as monitor and intervene. The Government would think further about pay-per-view. The authority would encourage British production but a quota system on cable would be inhibiting.

- 2) No mandatory separation of providers and operators.
- 3) In answer to a Parliamentary question the Home Secretary said that the licence period would depend on the technology installed. For tree and branch systems laid down in star configurations licences would run for 12 years, and extended to 20 years if switches installed later. A provider installing a fully switched system would receive from the outset a licence for 20 years.
- 4) The Home Secretary has the powers to allow a cable operator to provide a range of services on their network. Currently, there are five companies running 2-year pay television (feature film) schemes in Milton Keynes, Wellingborough, Northampton and Tredegar (Select TV, for British Telecom and Philips); Swindon, Chatham, Gillingham and Rochester (Radio Rentals); Greenwich, Plumstead, Abbey Wood (Greenwich Cablevision); London (Visionhire); Burnley, Hull, Pontypridd, Reading and Tunbridge Wells (Rediffusion). There are approximately 16,000 subscribers out of 108,456 homes hooked up in the experimental areas and there are 2.5 million homes in the UK connected to cable. In May-June 1983 the Polytechnic of the South Bank will begin education and community programming to 27,000 homes connected to the Visionhire cable network in South London. Education programmes will be linked to 'Open College' courses to be established in colleges/evening classes/polytechnics in the areas served. This model may be repeated throughout the country - where a cable company linked a university's or a polytechnic's TV studios to their network. A number of consortia are planning applications for franchises to the Home Office and the Home Secretary may appoint members of the new franchising body before legislation to advise him on the suitability of the proposals.

(See Appendix 2 for brief history of cable in UK)



Cable comment

The government's intentions on cable were, it is claimed, previewed last year at the Edinburgh International Festival, during September. In the months following the announcement by Technology Minister Kenneth Baker, the press had a field day. Who Pays What to Whom was the dominant theme pursued by many correspondents. Then came the publication of the Hunt Report.

This review of newspaper comment over the period begins and ends with two observations from Sean Day-Lewis writing in the *Daily Telegraph*:

Sean Day-Lewis, *Daily Telegraph*:

Suddenly it is accepted that the cabling of Britain is inevitable. "You can't hold up the weather," said Aubrey Singer, managing director of BBC television.

Peter Fiddick talking to the Director General of the BBC, 16 September, *The Guardian*:

"It is not a question of cable being a disaster — we've always said it was going to come. Nor am I arguing for the BBC or the IBA — if we're not needed in the end, it doesn't matter. What matters is whether the audience is being served.

"What we don't see is how cable can take over the central entertainment role in British television, and quite quickly so that the entrepreneurs can get their return. I see cable spreading more slowly, and being more useful for local services and as a back-up to the satellite for those few people with reception problems, to provide a universal service. We also believe — and we have argued this to Lord Hunt — that if there is full deregulation of cable, broadcasting cannot be defended."

Peregrine Worsthorne, 17 October, *Sunday Telegraph*:

Yes, cable TV may indeed have the effect of lowering standards, in the sense of bringing public service broadcasting down to earth. But that is precisely why it will do more good than harm.

David Hearst, 2 October, *The Scotsman*:

Not only does information technology offer industrialists the proverbial crock of gold but new technology offers the gurus of the New Right an ideal stick with which to beat the state industries of broadcasting like the BBC and IBA.

Comment on 27 September, *Times*:

Everywhere one looked at the National Cable Television Association (NCTA) convention in Las Vegas last May, people were buoyant about their prospects in a business whose time apparently had come. Last week, however, cable's optimists got a jolt: communications giant CBS (1981 revenues: \$4.1 billion) announced that it would shut down its critically praised but loss-plagued cultural service within 90 days. According to estimates by industry sources, the service had lost \$30 million in less than a year.

Bill Johnston, 2 August, *The Times*:

A decision on the liberalizing of cable television in Britain is expected by the end of the year but it is becoming increasingly obvious that unless cable regulations are properly constructed, the City will not provide the investment required by the new industry.

Paul Fox, 22 July, *The Listener*:

There are two key questions that Lord Hunt's Committee on cable technology will have to answer. Despite the dangerously short time they have been given to do their work, they will have to say, first, where the money is going to come from for the cabling of Britain, and secondly, what we are going to see on cable TV that we don't see on our own TV at the moment.

Yes, I know the answers that are always trotted out in reply: private enterprise will pay and first-run movies will pay. Really? The much criticised ITAP report on cable systems said that cabling up the urban half of Britain would stimulate the spending of some £4,500 million from private investment. The latest news from the United States is that it now costs \$1,000 to cable up one home. This means that if someone should decide to cable up 100,000 homes in the Leeds area, he will have to find £50 million. And that's just to provide the cable. It's a big and risky investment, even for an industrial giant like GEC.

Drew Johnson, 22 October, *The Times*:

Mr John Wilkinson, chairman of Telefusion, the radio and television rental and retailing business, yesterday attacked the Hunt Report on cable television for proposing 8- to 10-year licence periods.

"This is far too short a period to apply amortization on heavy capital investment and, in our view, the initial licence period should be 20 or 25 years," he said.

Peter Large, 30 September, *The Guardian*:

After the visionary glow, the cold shower: The Government is contemplating a rewiring of Britain's towns and cities for multi-channel cable television which might delay true multiple choice and full two-way services until the 1990s — and then only through a second recabling.

The cost of recabling urban areas, to serve about half the population, has been variously estimated from £2.5 billion up to £6 billion, all to come from private enterprise. Therefore, if the cheapest technology is chosen at the start, it could be a decade and more before there is the financial incentive to modernise.

Comment on 2 October, *Financial Times*:
British Telecom must have a major role in the development of cable TV or "a future Labour Government will change the whole cable scene," a union leader warned yesterday.

He warned potential private investors in cable TV that, based on experiences in America, profits were unlikely for five to 10 years and "there are bound to be changes of Government in the early life of a new cable system."

Dipak Nandy, 14 October, *The Times*:
Given the Government's determination to introduce cable television, it is no disrespect to Lord Hunt to suggest that the execution took place before the trial. With the benefit of hindsight, I must confess that we on the Annan Committee are not guiltless in helping to produce this outcome.

In our text of some 470 pages, we devoted about 10 to cable television. Our discussion of the evolution of broadcasting technology (satellite, cable) and of the rapid merging of telecommunications, information processing and broadcasting was cursory, amateurish and shortsighted. We vastly underestimated the pressure and the political clout of the commercial lobbies in these fields. Raymond Williams told us so at the time. In effect we left a vacuum, and Lord Hunt has filled it with a piece of *dirigisme* masquerading as deregulation.

Lord Hunt's terms of reference required him to consider "the Government's wish to secure the benefits for the United Kingdom which cable technology can offer... in a way consistent with... the safeguarding of public service broadcasting". As I read the report, I wondered what it would be like to read a report on the deregulation of prostitution, undertaken in a way consistent with the safeguarding of the sanctity of the marriage vow.

The author was a member of the Annan Committee of Inquiry on the future of broadcasting, 1974-1977.

Andrew Nell, 27 September, *Standard*:
The anti-cable lobby argues that a British cable system would mean the end of quality broadcasting of the sort which, supposedly, has made British television the envy of the world.

In fact, most British views about the poor quality of American television are about 10 years out of date (ie, pre-cable).

The thrust of the evidence which has poured into Lord Hunt's government inquiry into cabling Britain, however, has been to devise ingenious ways of stopping cable from upsetting the established broadcasting world.

No existing regulatory body is of the right temperament to enforce minimal regulations. All that is really needed is a couple of people and a filing cabinet (or, in tomorrow's information society, a video terminal). The IBA, which supervises ITV, has volunteered, but its ethos belong to the old world of broadcasting control and its recent failure to see the potential of direct satellite broadcasting hardly qualifies it to oversee a new technology with a light touch.

Even worse, is the plan of the Labour Party and the TUC to trust Britain's wired future to British Telecom. Now there is no reason why BT should not bid for cable franchises along with everyone else.

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Comment on 6 September, *International Herald Tribune*:

Another question is who will put up the money for cable-television networks, said Richard Ryder, an analyst at the London stockbrokerage of Phillips & Drew. Because of the heavy installation costs, he said, such networks probably will provide a lower return in their initial years than most British companies would be willing to accept.

James Curran, 3 November, *The Times*:

The ground rules proposed by the Hunt Report will assist the small number of corporations that now control Britain's mass media to dominate, as leading members of franchised consortia, the expansion of cable television. Already the five leading corporations control, in their respective sectors, 50 per cent of ITV programmes, more than 60 per cent of cinema admissions, 70 per cent of single record sales, 74 per cent of paperback sales and more than 90 per cent of national newspaper circulation.

Hunt holds out the promise of a new television system that is "innovative, experimental and sensitive to local feeling". But since he does not propose any form of regulated programme balance, most programmes transmitted by cable are likely to be old, formulaistic and foreign. It is much cheaper to replicate programmes than to make them. Since television operators will be seeking to maximize audiences as cheaply as possible to secure a return on their investment, they will rely inevitably on a diet of audience-pulling programmes imported cheaply from the United States.

Bill Johnston, 4 October, *The Times*:

The Government is confident that cable television in the United Kingdom could be a commercial success, but it has made little effort to seek the views of the public at large compared with the efforts it has made to woo those who may commercially benefit. Most of the submissions to the Hunt committee, of which there were more than 200, have been from those with obvious vested interests.

Sean Day-Lewis, *Daily Telegraph*:

Personally I doubt the City billions are am willing to bet that the 1992 Melvyn Bragg will be taking the chair at an Edinburgh TV Festival debating whatever happened to the cable revolution.

Pie in the sky?

BEST COPY

Graham Wade reports on the Royal Television Society symposium on satellites and cable, Manchester, 27-28 November 1982.

At the end of the recent Royal Television Society symposium on satellite and cable television held in Manchester, Bill Cotton (chairman of the programme committee, director of programmes for BBC television and director of development) observed:

'I think most of us go away from these events with the same views we arrived with — but at least we've heard the other view.'

The one-and-a-half days of papers, questions, comment and debate certainly highlighted some of the basic divisions which separate the pro- and anti-cable lobbies.

At the very beginning of the proceedings, Sir Huw Wheldon (current Society president) expressed the hope that the symposium would lend perspective rather than controversy to the subjects under consideration:

'Many exaggerated things have been said by many people in many places. Some of it has verged on the hysterical.'

He criticised the previous Edinburgh television festival for having issued forth some 'peculiar bubbles' of comment. In the event, the symposium provided both perspective and controversy in modest quantities.

The first major division of opinion became apparent towards the end of the opening session on technology. From the chair, Ceevee McCrerrick (BBC director of engineering) stated:

'It is true to say that the BBC is disappointed with the Part committee's recommendations of the MAC system for satellite broadcasting.'

He explained that the BBC's objection to MAC was not a technical one — the corporation doubted the commercial possibility of it ever becoming the European standard.

Tom Robson (IBA director of engineering) came to MAC's defence, not least because the IBA invented the system. He believed MAC could become the European standard. Peter Rainger of the BBC reckoned that the change-over to MAC, if it were adopted, would be awkward. In the short term, programmes would be made using PAL equipment, then converted to MAC for satellite transmission, and then reconverted to PAL for screening on unmodified PAL sets. He estimated that to re-equip studios with MAC equipment would be 10% to 30% more expensive than current PAL costs.

The American view

Most delegates agreed that the most memorable speaker was Arthur Taylor, chairman of The Entertainment Channel which was launched in the US as a new pay-TV project last June. TEC is jointly owned by Rockefeller Centre Cable and

RCA Cable. He began by saying that the American viewpoint on cable is: 'Be very careful.' It was refreshing to hear the head of a cable channel refraining from expressing unguarded optimism in favour of cautious realism.

To the delight of the broadcasters, Taylor said that in the UK we already had a good television system whereas in the US opinion polls showed that roughly half the population was dissatisfied with what the broadcast networks served up. He suggested that it didn't matter to the viewer whether programmes were delivered by over-air signals, cable, satellite or mule-train. Viewers were only interested in the programmes themselves and whether they liked them or not. According to his figures there are now 4,300 cable networks in the US which pass 37 million homes and serve 28 million basic subscribers and 15 million pay subscribers. He warned that many companies had strained their resources through the cable boom of the last few years. 'Equity capacity has long since gone,' he commented.

Taylor also warned that costs for installing cable networks in the US were rising well above original estimates. He regarded \$1,500 per home, or \$30,000 to \$40,000 per mile, as average costs. The fall of CBS' cultural channel he blamed partly on its attempt initially to attract advertising revenue. 'In the region of 20 advertising supported cable services are struggling for survival at the moment,' he added. His pay-TV channel had cost over \$100 million to set up and the operation contained no partial financing. 'Our company had to be financed in toto and up front — I will not be entering the cocaine trade if we run out of money.'

Unacceptable face of corruption

One of the most interesting passages in Taylor's lecture concerned his thoughts on how cable television should be developed in the UK. He recommended that the very best minds should be recruited to work out how cable should be structured, otherwise 'you'll be shortchanged'. There followed a solemn warning about underhand deals. 'The franchise operation is capable of immense corruption. Councillors often see the opportunity of having a comfortable retirement beyond their means.' Large amounts of loose cash would be floating around, he predicted, but it was of the utmost importance that people did not overstep the line of integrity.

He concluded by saying that the key to any pay-TV channel's success was the way it was sold to the consumer. 'Pay services are largely a door-to-door sale and that is of great importance. Do

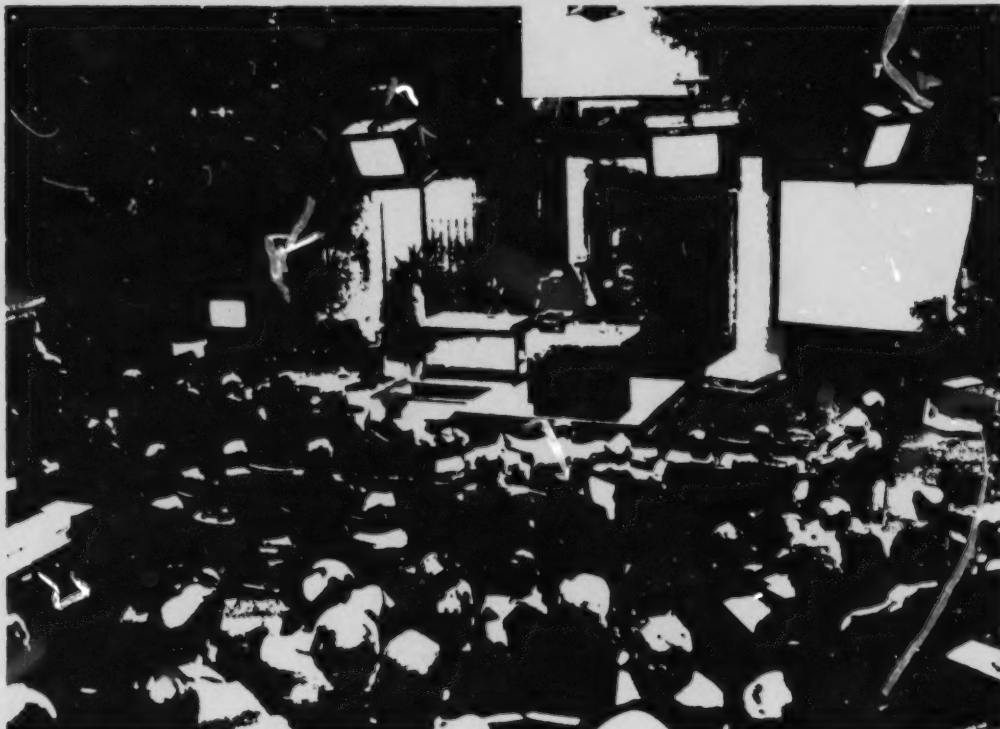
not underestimate the degree of sophistication required in marketing. Marketing expertise is what is going to be required." A leading UK cable executive could be seen nodding in vigorous agreement with these sentiments.

The view of the UK commercial interests was advanced by Richard Dennis of Rediffusion who is chairman of the Cable Television Association of Great Britain. He informed his audience that there are approximately 1.4 million homes connected to commercial cable networks in the UK and a further 4 million passed. In addition there are 1.1 million homes connected to non-commercial networks, run by housing associations, for instance.

He wasted no time in stating the cable industry's view on the Hunt committee's recommendations to the Government. He wanted a longer franchise period of up to 25 years, to amortise the capital costs, and he also wanted

the antiquated system - already in existence - to immediately devote their income to four or six channels to pay-TV. This would particularly suit companies such as his own (Rediffusion) as it would give them a chance to establish pay-TV operations in advance of other operators who wish to set up services, but who haven't access to existing networks.

Dennis predicted that enabling legislation to establish a formal cable authority would not be completed until 1985 or even 1986 and that some kind of interim authority would be needed in the meantime. "My opinion is that there will not be a rapid evolution of cable except on the released channels of existing networks." To some surprise, he answered a question from the floor by saying that for 15 a month his company would offer a "mixture of programming" - but when asked what kind of programmes, replied: "Please don't press me."



Ken Quanten of Rediffusion addressing the *Pie in the Sky?* audience. Technology Session one

pay-per-view. It was virtually the first occasion in the symposium that pay-per-view had been discussed, but it was not to be the last.

Dennis suggested that Hunt's ban on pay-per-view in the first instance was akin to throwing the baby out with the bathwater. He made it perfectly clear that cable in the UK would develop slowly without pay-per-view. "Without the confidence of the cable operators, nothing will move."

Dennis paraded the usual cable lobby plea for no controls on cable's development. Financiers would underwrite the expansion only if "the operating terms are appropriate - artificial constraints and restrictions will be counter-productive," he argued.

He also wanted the must-carry rules - which make sure cable networks carry the network signals of the broadcast channels - waived so that

Bill Cotton detailed the BBC's approach to DBS. He said the reason for operating a subscription channel of the HBO type was "to make a reasonable amount of money to feed back into programme production." The second proposed DBS channel would be the "Window on the World" idea which would provide an international dimension to television as well as room for repeats and events coverage. He admitted he had mixed feelings on the BBC "being awarded the first two channels and he attacked the corporation's constant critics. "If we don't do anything we're wrong and if we do something we're even more wrong."

He said that the BBC had told Hunt that pay-per-view was undesirable because it would strike at the very roots of the way British broadcasting had been funded up until now. Also the BBC had argued that a foreign quota should

be brought in for cable channels. 'We were looking for a commitment to British production.'

The thrust of Cotton's paper was that some sensible arrangement should be arrived at whereby cable, DBS and the broadcasters could co-exist reasonably. The fear of cable, he said, might encourage the broadcast networks to move downmarket which would help no-one.

Pay-per-view re-emerged in the final session of the first day in the form of two independent producers who promoted the idea with almost evangelical zeal. Michael Peacock of Video Arts Television accused the BBC of not telling the truth when it said that pay-per-view would be the end of broadcasting as we know it. He said the BBC had been paying far too little for its sports coverage for far too long.

David Puttnam of Goldcrest Arts and

(scriptwriter with Antony Jay of *Yes Minister*) mounting another powerful appeal for it to be allowed. He argued that writers should always be against restrictions of all kinds including censorship. He propounded the libertarian view that the advocates of restriction were 'Marxists, the extreme right and the authorities.' The IBA and BBC concern for standards was little more than paternalism. He concluded that he was prepared to put his trust 'in the judgement and taste of the audience.'

He was followed by actor Peter Bowles who also nailed his flag to the mast of pay-per-view. He believed it would bring excitement into the home. But he still advocated some form of quota to protect British production which should be stiffened by a levy on each and every foreign programme screened on broadcast and cable



Television advanced the notion that 'Broadcast television is the aberration while pay-per-view is the natural development.' In its 30 years of dominance he reckoned that broadcast television had bought programmes on the cheap and given nothing back to the industries it had pillaged. 'Where is the television-funded drama school in this country? Where is the film school? Where is the sports school?' he asked rhetorically.

Cotton admitted that perhaps broadcast television had obtained its films and sport on the cheap, but that was all the broadcasters could afford to pay. 'What we're concerned about with cable is taking something away from a nation which it once had.' He reasserted the argument that cable would only serve 40% of the population.

Pay-per-view retained its prominence in the second day's deliberations with Jonathan Lynn

channels. Money collected in this way would go to a development fund for independent, home-based programme makers.

Laurie Taylor (professor of sociology at York University) believed that 'the provision of choice creates a demand for even more choice' and went on to reveal the results of a survey which indicated that 56% of respondents wanted more television channels.

The 1982 Manchester symposium will be best remembered for the way in which it allowed the arguments surrounding the issue of pay-per-view to be articulated at some length. The cable entrepreneurs and the independent production companies, writers, actors and producers were overwhelmingly in favour. The broadcasters - in the name of public service broadcasting - were largely against.

The last word goes to Bill Cotton as programme committee chairman:

'I find the idea that money from pay-per-view will go back into the industry a bit naive. I think the money may go to someone else. It may turn out that the business will be dominated by people who will rip it off.' It looks as if the pay-per-view argument will run strongly until the government clarifies its position.

1
Puzzled Press! Peter Fiddick of *The Guardian* formulates a question at 'Pie in the Sky'. Photo: Bob Herrick, Tyne Tees

2
Talk of satellites brings an appropriately wide ranging gesture from Sir Huw Wheldon. Photo: Bob Herrick, Tyne Tees
3
Michael Peacock

APPENDIX 2

A BRIEF HISTORY OF CABLE IN THE U.K.

Cable networks were first constructed in Britain during the early 1920's for the relay of sound radio broadcasts, and with the spread of television after the Second World War these systems were converted to carry the new signals. A popular misconception is that cable started in North America and then moved across the Atlantic. In fact, the reverse is true. All the experimental research for developing mass distribution of television signals through cable was carried out by British companies, and the first ever city-wide cable network for television was built by British Relay in Gloucester in 1951.

Cable works in a relatively simple way. The network takes its signals from a master arial which gives signals of a very high quality, and these are distributed through wires to individual television sets. Current co-axial cable systems have a capacity ranging from 4 to 15 channels and future systems will be able to handle over 100 channels. At the present time, most cable networks carry BBC1 and 2, ITV 1 and Channel 4 plus some out-of-area IBA channels. This can leave a number of spare channels depending on the sophistication of the network.

Over the years, consistent pressure has been applied by the Cable Television Association, a lobby group representing the most powerful cable operators, to persuade governments to allow non-broadcast use of this spare capacity. Until recently this campaign fell on deaf ears although there were some exceptions, notably the local cable television experiments of the 70s. On January 19th 1972 a Tory Minister of Posts and Telecommunications, Christopher Chataway - reputedly against civil service opposition - granted a licence (to run until the Annan Committee's Review of Broadcasting) to Greenwich Cablevision, a small company in London. At the same time it was announced that further licences were on offer and applications would be welcome.

Several applications came in and eventually licences were awarded to another four networks: Rediffusion in Bristol, British Relay in Sheffield, EMI in conjunction with Radio Rentals in Swindon and the Wellingborough Traders TV Relay. The terms of the licences were rather vague, the most specific requirement being that output be 'specially designed to appeal to local tastes and interests'. Taking a week's programmes at random from Swindon Viewpoint's

schedule for early 1975 will give some idea of what viewers could see on their local channels.

Viewpoint's output for that week was in three transmissions, and each of these was repeated once. The first segment, with the umbrella title "This is Swindon", was made up of these items: excerpt from a concert at the Wyvern Theatre; an old age pensioners' party; local folksingers; rock group; football match; Swindon Steps Ahead, a film from the Civic Office; and pieces of continuity linking. The second segment, "Forum", had: 'The Jobs Threat', about redundancies at a local factory; a councillor on the employment situation; an interview with a representative of the Festival of Light; and a sequence on a Mother and Toddler Club. The third selection, "The Seven Day Hour", included local cinema information; Adverscan, the week's news presented by the local newspaper; Community Health Council; theatre news by the theatre's PRO; police information by the police; local sports; professional football by local team manager; and Diary Dates, about forthcoming events.

It was widely believed that there was an unwritten gentleman's agreement between the Conservative government of 1972 and the cable companies to the effect that local television, which was not initially allowed to earn revenue (the local service had to be financed out of revenue from rentals), would be followed after a reasonable interval by rather more lucrative concessions. However, after the election in February 1974 the new Labour government resurrected the Annan Committee, and because they would need considerable time to take and sift evidence, the deadline for the broadcasting review, then due for 1976, was extended to 1979. The licences for the local television experiments were also extended for a further 3 years. This move enraged the cable companies who were paying out thousands of pounds on equipment and staff and they were unable to recoup a penny of it. They had expected money-spinning concessions in 1976 but now were faced with a five year wait. Also, the companies realised that the new local services were not reversing the falling number of subscribers. Most people were not prepared to pay for cable just to receive the local channel plus the broadcast signals. On March 6th 1975 after the virtual shutdown of Greenwich and the impending closures of Bristol and Wellingborough the Government

relented a little and the brief of the Annan Committee was extended to include cable. This token was regarded as insufficient and too late. In the meantime the government had granted a sixth licence for local television to the Milton Keynes Development Corporation. This project planned to use a cable network owned by the Post Office, and marked a significant new development in that this was a publicly financed scheme while all the rest had been privately backed by commercial interests. Channel 40 in Milton Keynes began cablecasting in December 1976.

During this time the BBC called off advanced plans for its own local television experiment in Stoke-on-Trent due to economy cuts; there was a six week experiment in local TV in the Vale of Leven in Scotland and there were a number of small (estate based) experiments in community access TV.

By August 1979 all the cable TV experiments had closed down, finance having been the main problem. The British cable experience had been one reflecting changes of government and lack of policy. There is no comparative study of all the experiments and very little audience research was commissioned. (It was estimated that 30% of the available audience of 80,000 in Milton Keynes watched Channel 40 at least once a month.) However, five critical factors seemed to emerge in determining the success of community TV on cable: 1) the human factor - choice of staff 2) design and choice of equipment 3) adequate time to open and run a facility 4) what proportion of the area/town/city is cabled 5) location of the station (how local is it?).

APPENDIX 3

BRIEF TECHNICAL DETAILS OF CABLE AND SATELLITE TV

IN THE U.K.

- (a) Glossary
- (b) Cable TV in the U.K. (IBA)
- (c) Satellite and Cable: The Background (BBC)

(a) Glossary

Co-axial Cable. Cable consisting of a conductor (usually copper) completely surrounding and separated from it by a solid dielectric or by air with spacing insulators. This cable has a lower bandwidth than optical fibre.

Optical Fibre. Cables composed of threads of high purity glass which carry signals in the form of light pulses.

Tree and Branch System. A cable network which has a trunk, and branches that progressively split and serve each customer. This means that all connections to a subscriber's home have the same capacity as the trunk cable and all channels are available right up to the television. This system is generally composed of co-axial cable.

Star System. A cable network in which all channels are available on a trunk system (probably made from optical fibre) which connects from the control centre to a series of distribution points containing switching devices. From these, individual lines (possibly co-axial cable) of a lower bandwidth run to subscribers premises. Channel selection is initiated by the customer but takes place at the switching point. The possibility of interactive services (two-way communication) is much greater with a star system where there is only one junction box between subscriber and control centre.

Pay Television Service. Television material delivered over the air or by cable for which a subscriber has to pay a supplementary fee. A scrambler is used to prevent non paying customers from receiving this service and subscribers have a decoder to enable them to view Pay T.V.

Basic Cable. A package of cable television services which in the UK will include BECl, 2, ITV 1 and 2 certain DBS Services and perhaps some locally originated programmes, public programmes and access channels (as in the USA) The subscriber will receive this service for a flat rate fee.

Tier. Increasingly varied combinations of pay cable services which a cable operator offers in addition to the basic cable for an increasing scale of charges.

Pay Per View. A system where a subscriber can 'book' to see a special cable tv presentation, eg. film sports event, educational series.

Satellites Two types: 1) Communications satellites which transmit a low power signal to a large earth ground station for transmission to homes by cable or through air. 2) Direct broadcast satellite which is geostationary (in an orbit such that it remains fixed above the same point on the Earth's surface) and which broadcasts a signal of sufficient power that it can be picked up by a domestic ground station, perhaps a dish attached to a house, of 0.9 metre or less.



Cable Television in the United Kingdom

Cable Television in the United Kingdom

Since the beginning of broadcasting in the mid-1920s a number of listeners and viewers have received their programmes, not off-air, but by subscribing to a wired distribution system. The programmes are picked-up at a central receiving point, advantageously sited to give good reception using equipment designed to minimise interference. Signals are then distributed to the subscriber over some sort of cable. The operating company usually charges both a connection fee and a rental, with subscribers having the option of providing their own receivers or renting from the cable operator. Although this practice originated with sound broadcasting, it was extended to television in the early 1950s.

Each cable system is operated under a special licence from the Home Office; the licence specifies the technical standards to be met and the programmes which may be distributed. Subscribers need a normal receiving licence.

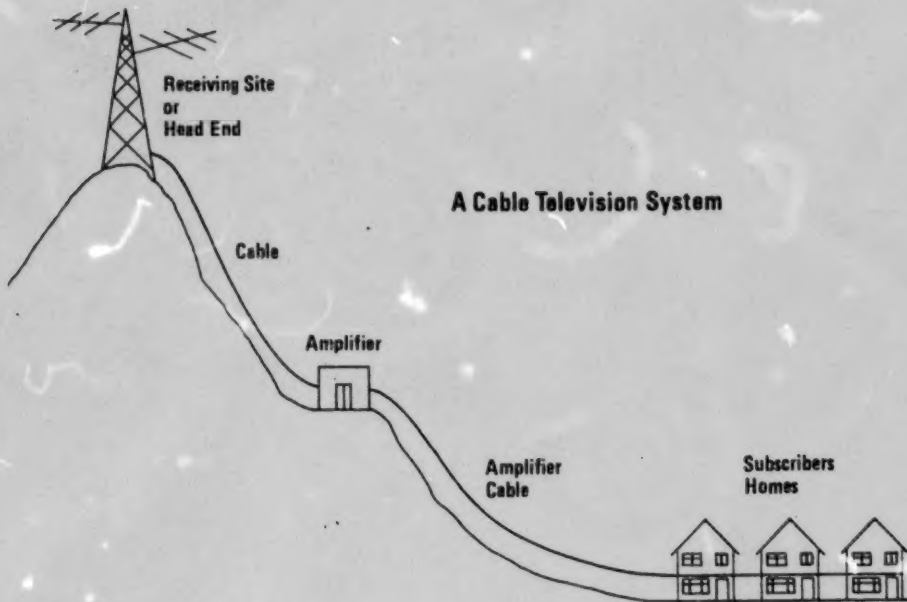
Cable Reception

One of the factors which contributed to the growth of cable television was that a cable company could often offer a service in a particular area before the broadcasters, since cable made use of advantageously sited aerial systems and sophisticated receivers, whilst building up the transmitter network took time. The advent of Independent

Television reinforced this trend, as did the introduction of UHF transmissions and colour television. In the case of UHF, where signals propagate in a manner similar to light, and thus do not reach communities which are in valleys or otherwise situated so as to be 'shadowed' from the main transmitter, large numbers of low power relay stations are required to supplement the coverage from the 51 high-powered main stations. Cable operators could often supply a service to such communities well in advance of the building of the local transmitter. A cable system frequently offered an 'out of area' additional ITV service, thus giving the subscriber a wider choice of programmes. The terms of the licence issued by the Home Office, however, have until recently, prevented the distribution of programme material other than from off air broadcasts.

Technically speaking, the object of a cable system is to pick up the required programmes at the receiving site, usually referred to as the 'head-end', and to bring them to the subscribers' homes with the minimum deterioration in quality. Losses in signal caused by the cable are compensated for by inserting amplifiers as required. In a well designed system the picture seen by the subscriber should be at least as good as that available off-air in the locality to a viewer equipped with a reasonable aerial installation, and for 'out of area' programmes the cable signal

will usually be much better than that available to the viewer were he to install a conventional aerial system.



Distribution Systems

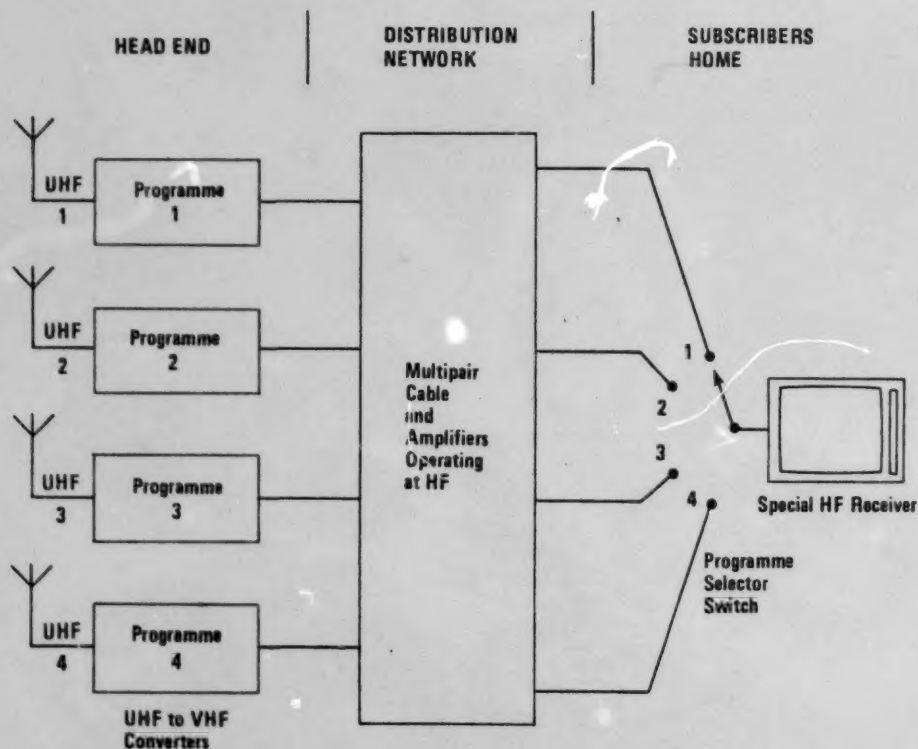
Cable distribution is usually effected by one of two systems, the older HF (High Frequency) system or, a later development, distribution at VHF (Very High Frequency) or UHF (Ultra High Frequency).

In the case of HF distribution, each of the signals to be distributed is received and its

modulation transferred to a common HF carrier, usually about 10MHz in frequency, (each programme being distributed at the same carrier frequency). A separate pair of wires carries each signal, customer selection of the wanted programme is made in the viewer's home by means of a switch which connects the receiver (tuned to the HF carrier frequency) to the appropriate pair of wires. Sound is usually distributed at audio frequency on yet another pair of

wires. Thus the cable required to distribute six programmes needs to contain six pairs of vision and sound wires and, once installed, it cannot distribute more than six programmes. This is a fundamental limitation of the HF system which, although capable of excellent results, is nevertheless now

considered to be obsolete. It is also worth noting that the receiver used is non-standard, being designed to receive only the HF distribution frequency, although it is possible to use a normal receiver with a special converter.

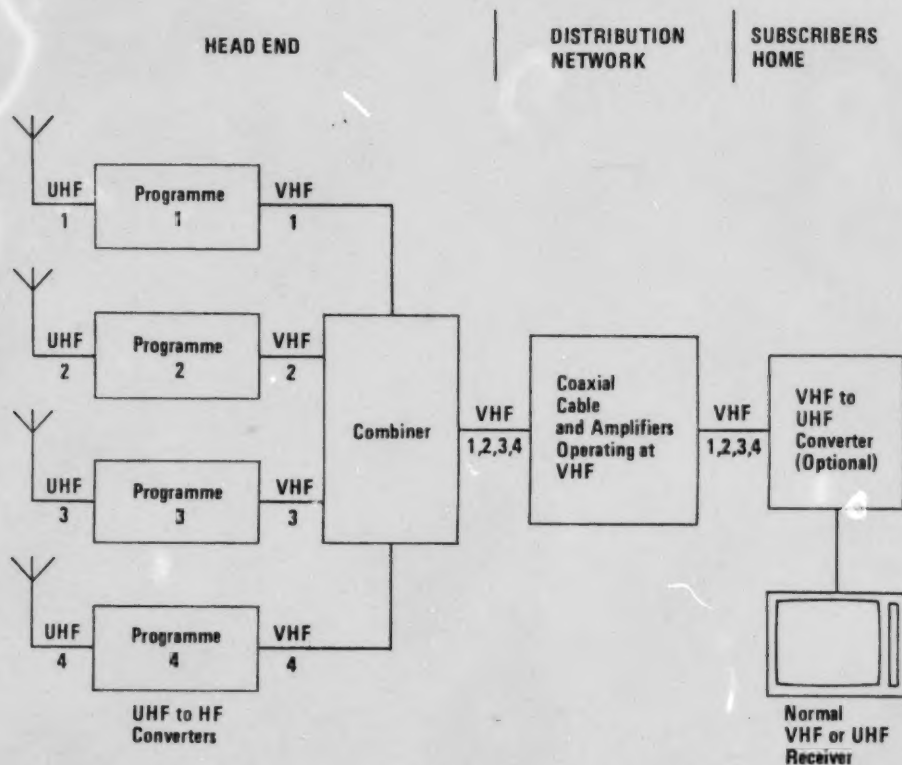


H.F. Cable Distribution

VHF Distribution

More common nowadays is the use of VHF distribution in the 30 to 300 MHz band. Here the signals received at the head-end are converted in frequency from the incoming UHF to VHF and distributed on a co-axial cable. All programmes go on the same cable but a different frequency is used for each programme. Again, amplifiers compensate for cable losses, (which are lower at VHF than UHF, hence the use of conversion at the head-end), and

these amplifiers may be channelised, where a separate amplifier is used for each signal; or wideband, where some or all of the distributed signals make use of a common amplifier. The system is more flexible than HF distribution since further programmes can be added by using additional frequencies. This may require fitting additional amplifiers, where channelised equipment is used, and care must be taken to avoid interaction between the various distributed signals when adding to an existing system which uses wideband equipment.



VHF Cable Distribution

The choice of distribution frequencies is agreed by the Home Office to avoid interference from and to other users; this choice also affects the number of programmes that can be transmitted. Subscribers can use a standard receiver, provided it has a VHF tuner, but for the UHF receivers normally available in the UK relatively cheap VHF to UHF converters are required.

For large systems serving subscribers spread throughout a community, referred to as CATV (Community Antenna TV), VHF distribution is generally used. For smaller systems, serving a block of flats or an hotel, known as MATV (Master Antenna TV), it is now common to distribute at UHF. Such distribution can be at the off-air frequencies, providing that care is taken to avoid signal degradation due to unwanted reception of the off air signal on the distribution cables themselves. Sometimes trans-lation to other UHF channels is used. Where UHF distribution is used standard UHF receivers are suitable, of course.

Capacity of Cable Systems

The number of programmes that can be carried on a cable system is limited, technically, by a number of factors. For HF systems the principal constraint is the number of pairs of wires that can be built into a single cable without the signal on one pair interacting with that on another.

For VHF systems operating in the frequency range 30 to 300MHz the limitations are set by the technical parameters of the television signal which, for the PAL system used in the UK occupies

a channel 8MHz wide, and by the characteristics of receivers. At first sight it might seem that a system operating in the VHF band could support thirty three channels but in practice this is not so. Transmission on adjacent channels makes reception difficult. Certain other channels must also be avoided to prevent interference due to the local oscillator, and the image frequency interference inherently present with the superheterodyne system of reception. In practice this means that the number of channels that can be carried is limited to about 12.

Optical fibres offer the possibility of an increased number of channels by carrying programmes on a beam of coherent light contained within a fine glass fibre. The electrical band width of such a system is quite wide. An increase in the number of channels can be achieved by putting a number of channels on one fibre, with several fibres forming a cable. Systems have already been tried which can carry 12 channels per fibre.

Satellite Broadcasting

The next significant step in broadcast technology will be the use of geosynchronous satellites for broadcasting direct to the home. This offers the broadcaster an opportunity to provide marked improvements in picture and sound quality by adopting a new system of transmission which avoids defects inherent in the PAL system currently in use. The IBA's MAC (Multiplexed Analogue Components) system for direct satellite broadcasting (DBS) has been developed for this purpose and the government have recently announced that, after due consideration of

systems for DBS by the Part Committee, MAC will be used for the UK's satellite broadcast services. MAC not only provides better picture quality, but also supports up to eight high-quality sound or data channels.

Such signals will also be carried on cable systems which will need to cater for the wider bandwidth required.

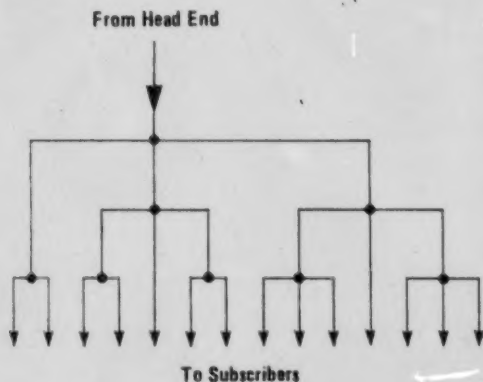
Development of Cable

Recent developments, particularly in the United States, have shown how the potential of cable as a distribution medium can be exploited. Distribution of programmes to cable systems using communications (as opposed to direct broadcasting) satellites across the nation is commonplace and systems offering thirty or more channels are now in existence. Amongst the programmes

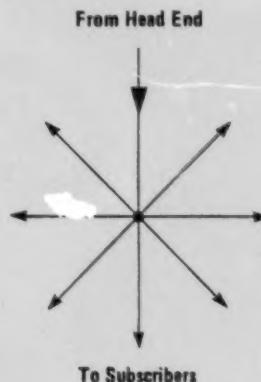
supplied are pay TV channels where the subscriber can only receive a particular channel upon payment of an additional sum. The techniques by which pay channels are made available vary, some relying on 'scrambling' the signal and supplying additional 'descrambling' equipment to the pay TV subscriber, whilst other systems rely on connecting the service remotely to the distribution point supplying the paying subscriber, upon payment of the appropriate additional rental.

Interactive Services

What is also of great interest is the possibility offered by the ability of cable to operate in both directions. In addition to supplying programmes to the subscriber, it is possible for information to be sent from the subscriber's home to some other destination. It is in this field



Tree and Branch Structure



Star Structure

that the undeveloped potential of cable lies since it enables such services as dial-a-programme, home shopping, meter reading and home security to be offered by the cable operator. Such a system can also support interactive services such as video-phone and electronic mail. These systems are already being used on an experimental basis in the USA and are being investigated in the UK.

When interactive services are taken into consideration the layout of the cable system itself becomes significant. Older networks were usually built using the system known as tree and branch. As the name suggests the signals from the head-end are applied to a trunk feeder which then supplies a number of branches, in turn splitting into smaller branches. Obviously, in such a system, information coming back from the subscriber needs to pass through a number of junctions before arriving at a destination such as the head-end or another subscriber. Each junction passed requires additional equipment to handle the signal and hence a more complex system.

A more modern layout is the star system whereby the signal is fed to a central star-point and all subscribers are fed by individual feeders radiating from this point. Although an interactive system is by no means impossible using the tree and branch structure it is more practicable when the star layout is used since there is only one junction in the reverse path.

The Future of Cable in the United Kingdom

Early in 1982 the government set up a committee under the chairmanship of Lord Hunt to look into the future of cable distribution systems in the United Kingdom. The report of this committee recommended the extension of cable systems and significant deregulation, particularly concerning the material which may be transmitted. All indications are that the government will follow these recommendations and a new body will be formed to supervise cable systems. In fact, even before the Hunt Committee sat, a number of trial pay TV schemes had already been licenced, supplying material such as feature films to subscribers.

It is however important to realise the extent to which cable can grow. The best estimates of cable development in the UK are that it will only be economic for about 50% of houses to be connected to cable systems. For the remainder of the population the only practicable way in which broadcast services, can be enjoyed, whether terrestrial based or using geostationary satellites, is by means of direct reception using a domestic aerial system. This is particularly true of smaller, rural, communities.

SATELLITE + CABLE

THE BACKGROUND

Whitehall has started the countdown for launching British broadcasting into the age w. households will receive programmes direct from space satellites and much of the United Kingdom could be 'wired up' for cable television.

On 4 March the Home Secretary made the historic announcement that Britain would start Direct Broadcasting by Satellite (DBS) in 1986, allocating the first two space channels to the BBC.

On 22 March following a Cabinet technology panel report, the Home Secretary set up a three man committee under Lord Hunt to examine the implications of cable, the maintenance of programme standards and the question of how developments are regulated.

This BBC briefing is a layman's guide to the history, technology and future trends of satellite and cable.

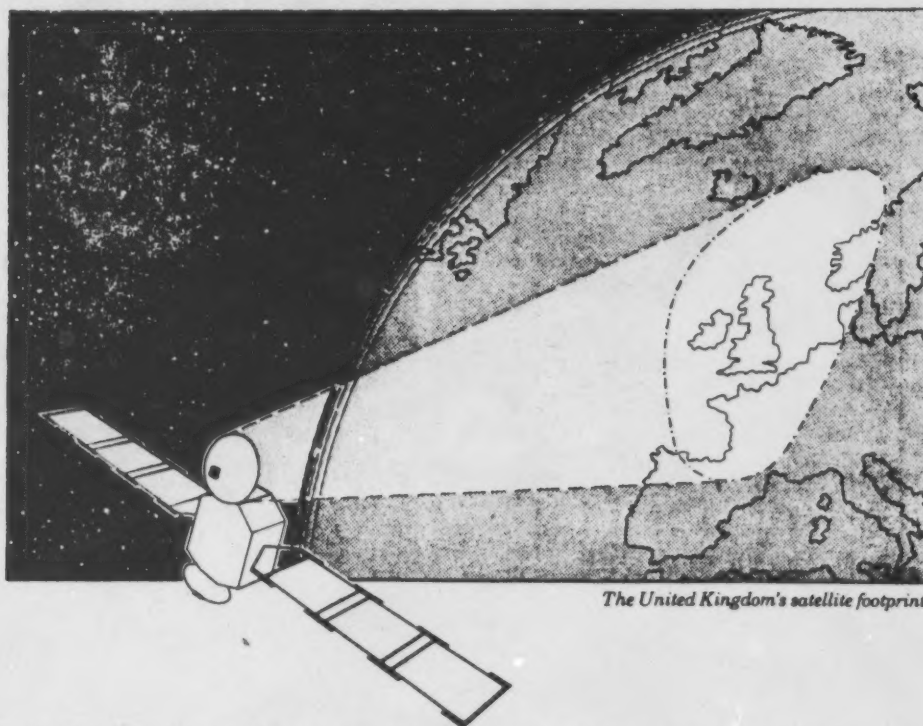
DIRECT BROADCASTING by SATELLITE

SATELLITE
+
CABLE

The Terrestrial Picture

Most homes in Britain today receive their television pictures from the nearest transmitter, via an aerial. They arrive 'terrestrially' over the air from one of the 590 transmitting stations needed to cover the country.

But Britain's first television satellite – with its own 'footprint' covering the whole of Britain – will beam programmes directly into the home from its position 36,000 kilometres (22,300 miles) up in space.



The United Kingdom's satellite footprint.

Initially, and subject to further channel allocations by the Government, it will transmit two new BBC services, a subscription channel and another called 'Window On The World' (See page 4). Existing BBC and ITV networks will continue to be carried by conventional transmitters.

The new satellite, being developed by a consortium of British Telecom, GEC/Marconi and British Aerospace, will be powered by solar panels with an operational lifespan of up to seven years. Other satellites will be kept in reserve.

Located at 31 Degrees West – on the Equator somewhere above the tiny Brazilian island of St. Paul in the Atlantic Ocean – the satellite will appear to be stationary. That is because it will be in 'geostationary' orbit . . . moving through space at the same speed at which Earth spins.

The History

Satellites have been used in telecommunications for many years. 'Telstar' and 'Early Bird' paved the way in the 1960s. In America today pictures regularly travel from coast to coast via satellite, but they finally reach television sets via a ground transmission station or cable systems. Beaming programmes directly into people's homes is a new development.

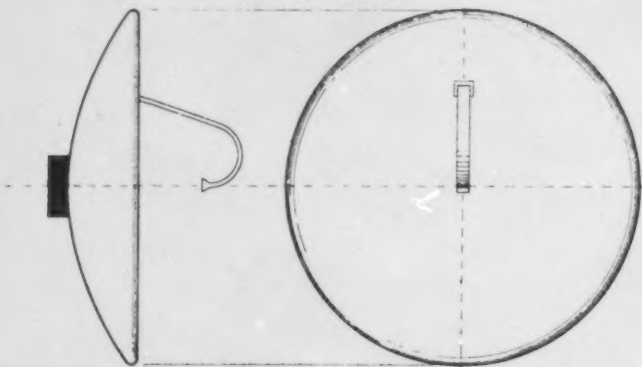
In 1977 the World Administrative Radio Conference (WARC), the international forum on wavelengths, allocated each country outside the Americas five satellite channels (even the Vatican City State has five). WARC also defined the reception areas to be covered by each country's satellite beam. Those areas have become known as national satellite 'footprints'.

The individual 'footprints' will spill over into other countries. This means the United Kingdom satellite services could also be received in Ireland, most of France, Northern Spain, the Benelux countries, Northern Germany and part of Scandinavia.

How Direct Broadcasting by Satellite Works

Television pictures are sent up to the satellite from a large dish aerial at an earth station. The signals are then transmitted back to earth. To receive those signals in the home the viewer will need a 'dish' aerial of his own – or access to a community dish aerial – just as he needs an aerial to pick up 'terrestrial' pictures.

The dish aerial, less than one metre wide, must point directly at the satellite. With elaborate adjustment the viewer might also be able to pick up transmissions from other countries' satellites if their 'footprint' touches Britain.



A dish aerial for home reception of TV signals direct from a satellite.

The cost of the dish aerials has been estimated at about £250, possibly falling as sales expand. A future possibility is a flat, wall-mounted aerial. The dish aerial could also be compressed into a flatter, corrugated form.

Two special boxes, one behind the dish aerial and the other indoors, will convert the satellite signals into picture messages which standard television sets can accept.

Viewers who pay to receive the BBC's planned subscription service will be equipped with a device, possibly resembling a credit card, to de-scramble the signal.

The Satellite Channels

The first two British satellite channels have been allocated by the Home Office to the BBC. Others will be authorised later. Each channel will carry a television picture signal and a number of digital stereo sound channels (for sending signals in coded pulses rather than sound waves).

Subject to agreement within the European Broadcasting Union (EBU) two sound channels will accompany each television picture. The new generation of television sets will be able to reproduce stereo sound. The other sound channels can be picked up by dish aerials in the same way as television pictures. They can then be played through a hi-fi system to achieve superior stereo sound.

BBC Radio hopes to use this facility for music broadcasts. The BBC World Service could also be carried by satellite, but the limits of the 'footprint' have to be borne in mind.

The BBC's Plans

The BBC has announced that it will run a subscription service on one channel and a service called 'Window On The World' on the other.

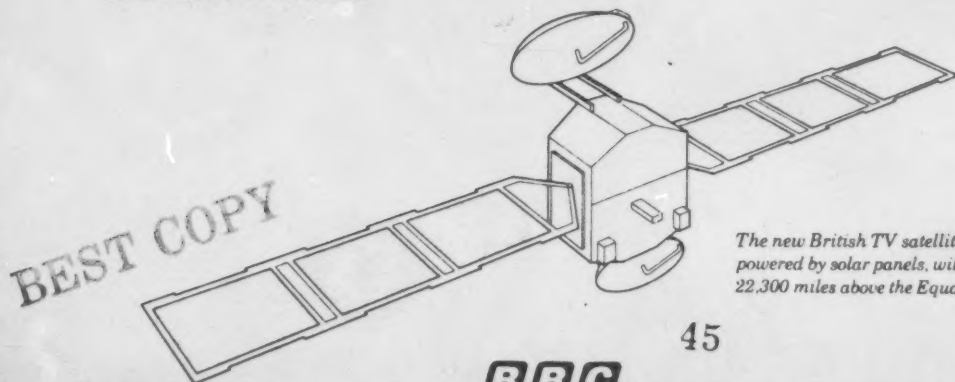
The Subscription Channel will provide a blend of feature films, special events, including orchestral, operatic, dramatic, sport and popular entertainment and, hopefully, archive material.

Window On The World will show the best television programmes from around the world, including repeats of BBC and, possibly, ITV productions. The Home Office has said that this channel will be funded initially by a supplementary licence fee for those who wish to receive the service. In the long term the BBC hopes that both satellite channels will be funded mainly from the subscription channel income.

Profits from the subscription channel will be ploughed back into productions for the prime networks, BBC 1 and BBC 2. Thus the ordinary licence-payer will gain as a result of these developments, for the BBC has said it will not remove any existing programme material from BBC 1 and BBC 2 for exclusive showing on the satellite channels.

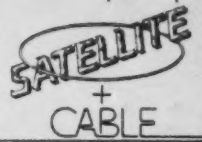
Satellite and Cable ... The Connection

Satellite broadcasting can also be used alongside cable television. A cable station could have its own more powerful dish aerial and relay authorised satellite transmissions to all its cable subscribers.



The new British TV satellite, powered by solar panels, will be positioned 22,300 miles above the Equator.

CABLE



The History

Cable distribution in Britain actually began at the end of the last century when some people were able to listen to West End plays in their homes. Now 2.6 million households, mainly in built-up areas, receive their television pictures from cable connected to their homes. It helps provide better picture quality in bad reception areas.

Some 1.5 million of those homes are linked to cable systems provided by 440 commercial operators. They pay an annual charge of about £15. Other schemes are run by housing associations and local authorities. The subscribers receive BBC 1, BBC 2 and ITV programmes, sometimes with additional options.

It is estimated that another two million households, close to existing cable networks, could easily be connected.

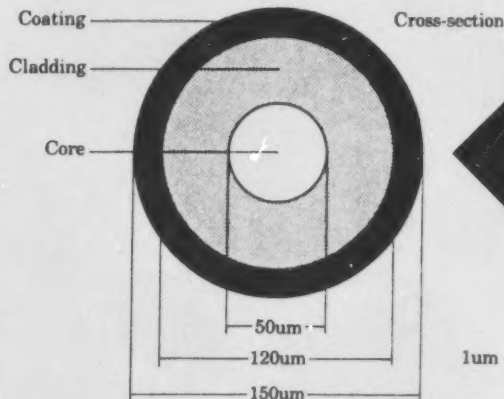
Last year the Home Secretary licensed six companies for 13 subscription television experiments. The BBC is involved in one of them, 'Showcable', run in association with Visionhire. Subscribers, who pay a fee of £6 - £12 a month, get alternative programmes, mainly feature films at the moment. The two year experiment will help the Home Office assess the interest in cable.

The Technology

Cable subscribers have special decoder boxes linked to their television sets so they can receive the service.

In America some cable networks have a ^{100 ✓}~~100~~ channel capability. Most British systems can carry only four. But now with the introduction of fibre optic cable -- signals are passed along a glass thread the thickness of a human hair -- British operators could have the same capacity. But the development of cable is going to be expensive. It has been estimated that it would cost upwards of £2,500 million to 'wire up' the main population centres.

Fibre optic cable -- no thicker than a human hair -- has a ^{100 ✓}~~100~~ channel capability.



1um = 1 millionth of a metre

BEST COPY

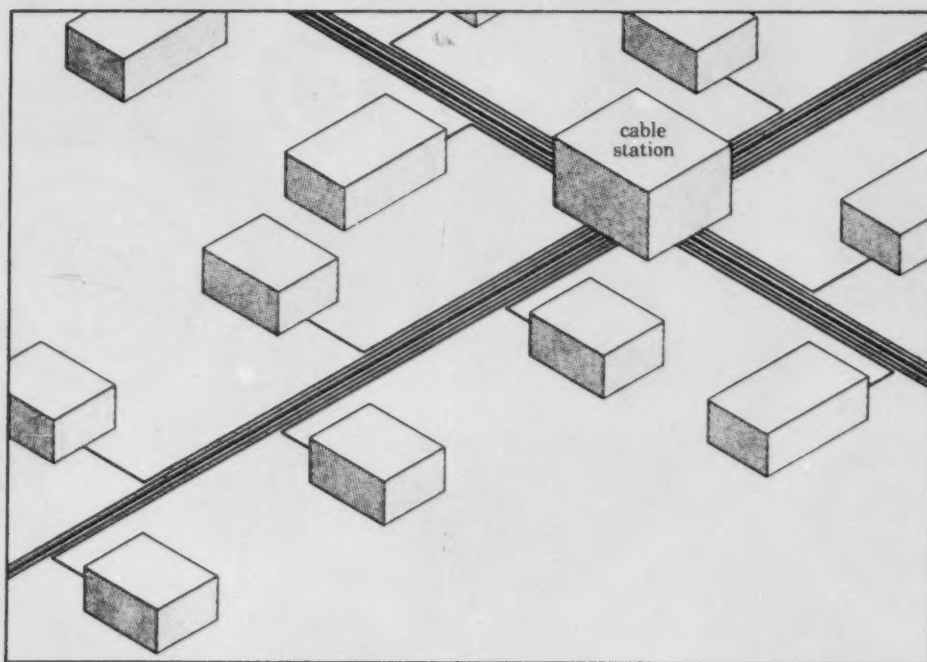
The Potential of Cable

To date, the chief role of cable has been to take interference-free television pictures into the homes of viewers in built-up areas where reception is poor. In the future satellite services could be relayed in the same way.

The Information Technology Advisory Panel has also drawn attention to other uses for a re-developed cable system, including additional television channels and community programmes. Greenwich in South London already has a service featuring locally made programmes.

Interactive services could open up new areas for the distribution of information and home services by cable . . . electronic shopping, banking, meter reading and security systems for fire and burglary.

Two-way cable of this kind means that electronic voting could be used for opinion polls or for immediate audience reaction to programmes, as happens in America already. Cable can also be used for giving clearer signals for radio channels.



A cable network with each house linked to the cable station.

The Politics

The Government's Cabinet Information Technology Advisory Panel has called for a quick decision on the future of cable so the private sector can start planning the redevelopment of cable in Britain.

If this is to be done the Government has to decide whether it will allow private companies to lay cable and to own the networks, or whether it should be left to British Telecom to retain its position as the main provider of telecommunications systems in Britain.

It has also to decide what form of control should be exercised over the programmes and information distributed. There is strong pressure that programme standards should be maintained and that the financial footing of the BBC and ITV should remain secure.

There is also a call from the cable companies for 'deregulation' - to be allowed to operate freely and competitively, possibly being freed from their present obligation to carry existing BBC and ITV services.

The Hunt Committee will report at the end of September 1982.

The Home Secretary has identified the broadcasting policy aspects of the committee's inquiry in the following terms: *'They include such matters as: whether cable operators should control cable systems and provide programme services; programme standards, and range and balance of programme content; the obligation on cable systems to relay UK broadcasting services; whether advertising should be permitted; and the appropriate supervisory framework.'*

SATELLITE CABLE

THE JARGON EXPLAINED

COAXIAL CABLE

Copper wire surrounded by insulation and a copper mesh conducting screen, capable of carrying television and sound signals, commonly used in connecting rooftop aerial to television set.

DECODE

Electronic device to unscramble coded signals.

DEREGULATION

Term used by cable operators who want to be freed from statutory regulations on the services they can offer.

DIGITAL SOUND

Superior quality sound signals created by transmitting in digital (pulses) rather than sound wave form.

DBS

Direct Broadcasting by Satellite.

EBU

European Broadcasting Union, the co-ordinating body for television affairs in Western Europe.

FIBRE OPTIC CABLE

Hair-like threads of pure glass which can transmit signals in the form of light pulses.

FOOTPRINT

The area in which people can receive television pictures from an individual satellite.

GEOSTATIONARY

A satellite is said to be in geostationary orbit when it is moving at the same speed at which the earth spins, so appearing to be stationary.

INTERACTIVE

Two-way communication giving the cable subscriber access to such facilities as electronic shopping and banking and participation in programme polls etc.

PRESTEL

Trade name for British Telecom's viewdata system transmitted via telephone lines, mainly for business use.

SCRAMBLED SIGNAL

An electronic signal modified so as to make it unreceivable without decoding equipment.

SUBSCRIPTION SERVICE

Alternative television programme service paid for directly by the subscriber.

TERRESTRIAL

Television signals sent over the earth's surface from a land-based transmitter rather than through space.

31 DEGREES WEST

The longitudinal position above the Equator from where the British television satellite will transmit.

TRANSPONDER

Channel on a satellite which transmits electronic signals.

WARC

The World Administrative Radio Conference. It drew up a plan in 1977 for Direct Broadcasting by Satellite, giving each country outside the Americas five satellite channels.

APPENDIX 4

THE GENERAL EDUCATIONAL POTENTIAL
OF BROADBAND CABLE TECHNOLOGY

1. Potential
2. U.K. Realities?
3. Some Existing Cable Education Networks:
 - a. Pennerama (USA)
 - b. TAGER (USA)
 - c. Appalachian Community Service Network (USA)
 - d. Knowledge Network (Canada)
 - e. Reading, Pennsylvania (USA)

1. POTENTIAL

What general, potential educational benefits are offered by broadband cable technology?

The likely pattern of cable development, so far as it can be predicted from a vantage point in February 1983, is one of incremental and local growth starting from existing cabled areas. This is not necessarily the most desirable form of development. Indeed, the Council for Educational Technology has argued strongly in favour of an advanced national network. This seems unlikely unless the government changes its present insistence that cable development should come about through private investment in the entertainment potential of broadband cable systems. Assuming an incremental pattern of growth, the potential educational benefits would initially vary from one area to another depending on such factors as: -

- (a) the state of local cable technology (e.g. fibre optic or coaxial; tree-and-branch or star-switched distribution);
- (b) the ownership and philosophy of the local cable system (e.g. whether owned by a purely local or regional consortium or by a branch of a national or multinational company and subject to centralized management). This would affect decisions regarding the number of channels and the nature of provision for educational and community programming and 'access' programming;
- (c) the socio-economic character of the area, which could affect such variables as the percentage of homes hooked-up to cable, the percentage of subscribers on second or third tier subscription rates and the percentage of subscribers predisposed to making use of educational programming.

The extent of local variation would in part depend on the nature of the regulatory framework established by central government; at the time of writing there is no way of knowing just how far the relatively liberal framework proposed by Hunt would be adopted.

Allowing for the possibilities of local variation, the general potential educational benefits may be identified as follows:

More time available for ETV

- (a) assuming a system of, say, 16 channels or more (and some systems currently in development in North America run up to 200 channels), there would be many more hours of television time

for educational programming available than is currently the case on national and regional off-air broadcasting channels. Certainly in the short-term, cable operators would have difficulty in finding enough programming and would look to education as one source; they would also regard educational programming as a sort of 'good behaviour' badge, to off-set community fears about the prospects for moral degeneration etc; although Hunt did not suggest that operators actually be required to provide access for educational programming it seems almost certain, even under Hunt's liberal structure of control, that the franchising system would favour operators who undertook commitments of this kind.

Improved facility for local programming

- (b) following from the local nature of cable television combined with the considerable capacity of broadband cable, the new cable systems are likely to offer more opportunity than currently exists for the distribution of programming designed for or produced by local groups for specialized audiences, and this might well favour educationalists.

More scope for experiment

- (c) following from the capacity of broadband cable, combined with what is likely to be a less restrictive regulatory framework than that currently applying to off-air broadcasting, cable systems offer greater scope for experimental programming, freed from the full burden of commercial and professional constraints. Again, this could favour educational uses.

Improved facility for integration of video with voice communication.

- (d) cable systems also offer a multiplicity of radio channels: e.g. this could allow a choice of different sound-tracks for any given video transmission, and this could have important educational uses for the design of educational programming to cater for different levels of interest or difficulty.

More opportunity for 'dedicated' channels.

- (e) following from the large number of available channels, cable systems offer the possibility of dedicated educational channels, i.e. reserved exclusively for certain categories of use, such as educational. This suggests, for example, the possibility of a 'television' college, offering a 'learning environment' more powerful, potentially, than, say, individual video-cassettes.

Better transmission times.

Combination of 'broadcasting' with narrowcasting opportunities

Flexibility of marketing strategy

Access to potential distance-education student

- (f) with a dedicated educational channel, programmes can be transmitted at more convenient times for adult students, such as mid-evening and week-ends.
- (g) following from the potential of star-switching distribution patterns (or from the use of decoders in individual homes on tree-and-branch systems - but this has less potential), cable systems allow both for general cablecasting (i.e. programming for all subscribers to the system) and also for narrowcasting, to selected groups of subscribers (usually, but not necessarily, on payment of an additional fee). This enhances the range of marketing possibilities for educational producers and distributors. For example, they can restrict, a priori, the categories of subscriber to be allowed access to particular programming. The fee paid to the operator for a particular category of programming could incorporate a course registration fee which the operator would pass on to the educational provider.
- (h) educational programming need not be confined to one cable system: it can be fed to all or to some cable systems depending on the ability of the producer or his agent to negotiate successfully with different cable operators, or upon the nature of central regulations governing the reservation of cable capacity for certain categories of provider. Links between cable systems are/could become possible through the use of national British Telecom trunk routes (the new ones have a capacity for simultaneous transmission of four colour television programmes), satellite, microwave, or by postal/parcel delivery of video recordings.
- (i) cable can provide educationalists with access to new categories of distance-education student who might not otherwise be attracted into a distance-education system: e.g. by increasing the likelihood of exposure to educational programming among cable subscribers or by the provision of educational courses via cable that are more heavily dependent on television learning components than is the case, say, with current Open University course offerings.

Cable can serve wide variety of educational purposes.

- (j) cable systems offer institutions of education, schools, polytechnics etc., opportunities to (i) provide educational promotional and related programming to normally registered full-time students who can benefit from home-study by cable television or radio; (ii) to increase the flexibility of learning strategies among normally registered part-time students; (iii) to attract new registrations from members of the population who would not normally be attracted into formal education, through promotional use of cable programming - as in the Poly of the South Bank's cable experiment to boost applications for 'open access' courses; (iv) to build up 'distance-learning' courses for the house-bound and other categories of student who cannot or will not register for other forms of formal education; (v) for educational institutions to communicate with each other (as in professional courses for staff, INSET etc.) One example in this category is provided in London where 7 teaching hospitals are to be joined up by fibre optic cable so that students in all centres can view live televised operations, and for other purposes; (vi) for groups outside the formal educational systems, such as senior citizens' centres, to develop their own programming for their own information/educational needs. The experience of Reading, Pennsylvania is very instructive in this respect, and has demonstrated a variety of tangible benefits arising from interactive television for/by senior citizens. (NB: Modern broadband cable systems should not be confused with the closed-circuit cable systems that have been used in some LEAs for linking together various educational institutions: these systems were technologically more primitive; they depended on subsidy for their survival; they did not extend to individual homes; they were not usually interactive. Development of broadband technology as envisaged by the present government sees the development of these systems occurring in response (initially) to profit opportunities offered by entertainment channels. However, educational channels would not necessarily be prestigious 'loss leaders': once trunk routes and major branch routes have been laid, there is relatively little additional cost for a commercial operator to link up

(Distinguish from traditional closed-circuit systems.)

individual homes passed by such trunk and branch routes. Therefore, if an operator attempts to meet a need which seems 'marginal' in relation to markets for 'entertainment' channels he may still envisage a healthy profit, particularly if the programming emanates from partially-subsidized sources such as educational institutions, or if he can use programming that has been widely used elsewhere and rental charges are modest).

Interfacing with
other 'new media'

- (k) broadband cable systems allow interfacing of cable services with other electronic hardware, such as personal computers, videodiscs, on-line data services etc.; cable systems are also very suitable for feeding satellite signals from the cable head-ends to individual homes.

Interactivity
(see also Appendix 4)

- (l) as has been implicit in some of the above, broadband cable systems allow for direct interactivity in any of the three basic modes of video, voice and data communication, and involving any two or more persons interconnected through the system. Although commercial cable operators are likely to provide only for some rather primitive forms of digital interactivity in the short term, it is vital to recognize that much of the excitement about cable is premised on the belief in the desirability of long-term developments that will allow full exploitation of the potential of broadband cable technology. Even fairly primitive forms of digital interactivity allow for the possibility of educational testing/examining by television, and there are precedents for this in the TAGER cable education system in Dallas. (Scope for interactivity increases with star-switching). cable can be used for 'print' display systems of the view data level of sophistication rather than the more primitive teletext systems (e.g. Oracle and Ceefax). but not dependent on the telephone lines. Like existing viewdata and teletext services, cable videotex systems can be used for telesoftware transmission for computer users.

'Cabletext'

Video/Cable

Cable : a stitch in time

KEITH YEOMANS was education producer at BBC Radio London where he produced, among other programmes, *Black Londoners*. At the National Broadcasting School he was head of community and overseas training. He is now a broadcasting consultant for CIT Research which has carried out a cable survey based on a sample of households in Britain, West Germany, France and the Benelux countries. His brief at CIT is to look at local programming for cable and in particular its educational uses.

BEFORE WE are all carried away on the tidal wave of cable hype, set rolling by the Government's imminent proclamation, it is worth taking a closer look at some of the surfers sliding closely along the top of it. Everyone with something to gain from cable (and a few who may lose out but like a gamble) has been bouncing up and down in front of the cameras and pointing eagerly across the Atlantic. There have been a few cautionary voices trying to stick a pin in the American bubble or take a cultural sledgehammer to the machines of the new age.

None of them, for my money, has examined some of the claims being made to find whether they stand up. But it is in the educational area where some of the most scrutiny-worthy claims are made in the time honoured broadcaster's ritual known as gilding the lily. Some of the leading people in their field I have talked to have been all too ready to admit that they are not sure how the cable wonderland is going to work for them. It's worth looking with their honesty at some of the miracles this buried treasure is going to work.

Cable means more narrowcasting for minorities -- depending on how big the minority or how rich it is. Even if operators were to allocate free channel space out of simple generosity or under regulatory duress programming could still come in at £15-20,000 per hour, depending on union agreements among other things. If the minorities are scattered there may not be enough in any one cable area to yield sufficient subscribers to make the exercise worth while. It also depends on the kind of minority you are talking about. Blacks

and Asians are an obvious example. The main demand would be for sub-continent films, and video is already well established in that market.

In Britain, the cost per thousand of reaching minorities would probably only interest advertisers in those who live at the top of the market, meaning "cultural" programming -- a commodity which is hardly scarce on the four channels of British television. If subscription and advertising won't pay, that leaves public or private sponsorship. With certain exceptions the public purse is not likely to be forthcoming and the private one is an unknown quantity.

Cable means community TV -- it already does in the States, where regulations force many franchise holders to offer free channels, studios and equipment to virtually anyone wanting to use them. The rash of experiments which dotted western Europe in the seventies were in many cases written off as failures without too many people being clear about how they were meant to succeed. Obstacles were placed in their path (like viewers having to pay for sets to be adapted in one case) and built-in hardware costs priced them above demand. Besides, British audiences are not used to hunting ghetto slots across channels yet and participatory programming may not throw up enough of a scent to change that. If it is not to remain a hobbies corner, regulation must provide for at least promotional slots on mainstream programming.

Cable will offer new opportunities for independent producers -- the ones currently running a hungry finger round the C4 bowl. The cost margins likely to face operators will hardly have them scattering seed money for good but unproven ideas. If it goes on cable it will have to be proven or safe -- and that will almost certainly mean imports, reruns or formula programming from producers already a long way from the drole queue.

Cable will open up new avenues for educational broadcasters. It may have done in the States where, on the networks, education means things like *The Ascent Of Man* (and why not?). Here, that kind of programme still sits in peak slots, although piped movies may shift it in a kind of self-fulfilling prophecy. All four channels carry a fair amount of hardcore educational programming for the committed audience and a certain amount for those they would like to see committed. It is quite possible that an unsatisfied demand still exists for how to

programmes, provided the money can be found.

Output for the educationally deprived (the great potential of broadcast education) and its fast growing kid brother social action broadcasting, are not likely to flourish in a medium which the people they are aimed at can't afford or can receive because they are too thin on the ground.

With one exception, the schools cable system of the sixties is defunct: schools favour cheaper cassette recording and did not seem to go a bundle for home-grown output. Many of the television centres set up to pipe learning round higher education are now fighting for their lives with senates red in tooth and claw.

There is a ray of hope here: Vision hire has announced plans to offer franchise space out of mainstream hours to the Polytechnic of the South Bar for educational programmes aimed at the public. If this kind of facility exists, could save the lives of a number of threatened local facilities and the stars who run them but it sounds like a candidate for regulation.

The real excitement for many educators is interactive cable. They sit you down and tell you wondrous tales of people with home computers summoning up fairy software and talking with their fingers to tutors and computers in other parts of the realm, even across the seas. Before we get up and follow them saucer eyed let us look at the reality.

Cable will mean new services probably will. Certainly, operators will hope to cash in on tele-shopping, dating, voting and the rest. But the kind of cable network we are likely to get will only have a limited upstream capacity enough for you to make primal responses, like "yes", "no", "I want", "Gimme" but not enough to sit down at the keyboard and compose the most sophisticated requests that an educated person makes of a computer. There will probably be enough downstream capacity (like the American institutions networks, in which case who pays for the domestic subscriber?). They may be cheaper for some time to come via British Telecom.

All this is not an attack on cable. It is, after all, only the fashionable new way of carrying pictures and sound (and what, incidentally, of the 100 or so FM stereo channels that should be available?). The development of technology will make some of the more far reaching claims cheap and accessible in the next twenty years. But we have to be concerned with what we are going to get in the next five.

That means a concern not just with regulation that preserves programme standards but also safeguarding the long term development of cable along lines which will simply widen the information gap.

Broadcast 1983
Jan 31st
Video/Cable

Education on cable

KEITH YEOMAN is preparing a feasibility study on providing the Rediffusion cable operation with an educational channel.

Yeoman, an educational broadcaster who has worked at the National Broadcasting School and on the CIT Cable Research project, is looking to programme and finance a 20 hour a week channel which could then be offered in Rediffusion's basic-tier - at no extra cost to the subscriber.

"First one must establish the amount of material that is available from existing broadcasting bodies, Universities and Polytechnics. And we would want to have the ability to originate new programmes through independent production houses, he says.

"A unit cost per hour must be worked out and then we'll be looking around at who will pay for it", explains Yeoman who believes there are three possible sources of money - "public sponsorship from such as the Department of Education and Science or Manpower; private sponsorships from big companies looking to have their names associated with prestigious programming and money from overseas sales. "I believe, if we are able to provide enough reliable British educational material, there is a worldwide market."

Nick Mellersh, director of programming for Rediffusion, is also awaiting studies on channels that deal with hobbies, culture and consumer finance. □

THESE 17.12.82 Rediffusion switches on to learning

by Karen Gold

One of the largest likely bidders for a cable television franchise is considering proposals for an educational channel which would broadcast for 20 hours over five days a week by 1985. Rediffusion, which has television production and rental interests, has commissioned a feasibility study of potential producers and investors. The new channel would be supplied free to households which bought a cable system on top of the various paid for entertainment and local channels.

University and polytechnic television departments are understood to be particularly interested in the plans. Their involvement would increase their audiences and prestige considerably, according to Mr Keith Yeoman, the educational broadcasting consultant carrying out the study.

Television companies, local education authorities and educational publishers are also being canvassed for their interest in an initial output of mostly existing programmes for all levels from pre-school children to adults.

The programmes would be formal education rather than leisure-oriented, and would exclude more commercial areas - such as foreign languages for business - which would be on other channels for an additional fee.

Mr Yeoman is also investigating funding mechanisms such as commercial and public sponsorship, either for specific programmes or a programme-making pool, and the market for overseas sales. Later on a specially established organization could make programmes as well as buy them, Mr Yeoman said.

Rediffusion too is interested in investing or sharing the channel with other operators, according to Mr Nicholas Mellersh, the programming director for Rediffusion Consumer Electronics. However, the company would only become involved in cable provided it received a substantial share of the franchises.

"There is no point in just operating one franchise," Mr Mellersh said.

BEST COPY AVAILABLE

1. Pennerama

Pennerama, Pennsylvania's continuing education cable television service was formally established in 1979. It represents a partnership between the Pennsylvania State University and individual cable systems in Pennsylvania which have organized as a nonprofit organization called Pennsylvania Educational Communications System (PECS). PECS has built and maintains a microwave relay system interconnecting individual cable companies throughout the state. By 1981, PECS had a complete statewide network in place, capable of serving an estimated 1.2m. households. Programming initially comprised four-hour blocks, representing components from up to 8 courses, repeated three times a day and seven days a week. This was likely to be expanded to six-hour blocks, repeated throughout 24 hours. There was also scope for interruption to the schedule for narrowcasting of live seminars or teleconferences. As demand increases, additional channels will be added for specialized services. Penn. State uses Pennerama in its Open Learning Programme. It actively encourages the use of Pennerama by all sectors of higher education, professional associations and government departments, for education and training.

2. TAGER

The TAGER network of Dallas, Texas, is run by the Association for Higher Education in Dallas. 2 groups of channels are provided: (I) Broadcast: 4 cable channels in the basic price tier, with priority given to school programming between 7a.m. and 4p.m. on weekdays, and to higher and continuing education during the evenings. There are various support services, including print supplements, and exams at proctored centres. Apart from real-time digital response facilities, interactivity is relatively indirect (e.g. telephone conferences, mail etc.); (II) Narrowcast: 4 channels, in the premium price tier, carrying credit courses for business, industry and government and non-credit courses in a variety of areas. Corporate subscribers may have programming relayed directly to employees' homes at no additional cost.

As in the case of Pennerama, TAGER represents a cooperative arrangement between institutions of higher education and commercial cable operators, with the operators also undertaking an element of the associated administrative work.

3. Appalachian Community Service Network

This developed out of NASA-subsidized experiments into provision of educational and community services by satellite for Appalachia, during the 1970s. ACSN is now an independent educational television service distributing to cable systems by satellite on a nationwide basis. Formally established in its present form in 1980. Provides 64 hours of programming a week encompassing a very wide range of courses ranging across five principal categories: namely - (i) professional development programs; (ii) career development programs, (iii) 'learning for life' programs (e.g. car maintenance, home repairs, needlecraft), (iv) 'learning the latest' courses in a variety of fields; (v) college credit telecourses and in-service training, involving participation of local colleges and universities. Telecourses also include study guides, required reading specifications, texts and exams. The Independent Study University of Kentucky, organized at the University of Kentucky is not untypical of the participating institutions. For example, its telecourses include introduction to sociology; composition; the solar system; American government; the individual, marriage and the family; Shakespeare survey; elementary astronomy; teaching the young handicapped child; teaching gifted and talented children; discipline and classroom management. (NB: not all these originate with ACSN). The Introduction to Sociology course is worth three credits; the fee is \$108; print materials include a study guide and a set book. The telecourse itself comprises 30 half-hour TV programmes. Viewing is possible at home for subscribers to the relevant cable networks or at designated viewing centres.

4. Knowledge Network

The Knowledge Network of British Columbia is charged 'to assist and collaborate with the universities, colleges, provincial institutes, school districts (etc.) ... in the development and delivery

of educational programmes and materials and to establish and maintain and operate a telecommunications network'. This government-funded network has three elements: a closed-circuit, inter-institutional system; a closed-circuit, low-power transmission and satellite connection to off-campus, interior and northern locations; and access to an educational channel on community cable systems. It started operations in January 1981 with a schedule of 77 hours per week sent to 35 receiving stations. Since then 60% of the province's homes have been linked to the Knowledge Network via satellite, cable systems and local rebroadcast systems. It has extensive prime time availability, but television is thought of as merely one (although very important) part of the total learning system.

A number of different types of course are available: Telecourses are those courses in which the content essential to learning is carried on television, but which local colleges or school district continuing education organizations supplement with study guides, texts, tutors, examinations, etc. These are known as Supported Telecourses. The television part of the course may be pre-recorded or may be broadcast live. In the latter case the broadcast will include a live instructor or instructors as well as taped videos. There is also a telephone talk-back system which allows viewers to telephone during the broadcast and ask the instructor questions. The other type of Telecourse is the Unsupported Telecourse, in which television is used to augment print-based correspondence material. Teleseries are structured series of television broadcasts. They are of much more general interest than Telecourses and do not count for credit towards a qualification. 'Fast-Track' courses are telecourses which are broadcast much more frequently than the normal series of Telecourses and consequently can be completed in less than half the time needed to complete a standard Telecourse. They are offered in up to four episodes weekly and can be completed in less than two months. (These details are taken from an account by Charles Ferguson, staff tutor at the Further Education Staff College at Coombe Lodge, and published in Coombe Lodge Reports, Dec. 1982)

An experimental system was set up in Reading, Pennsylvania (pop. 88,000) in the mid-1970s to explore the potential use of 2-way cable TV for local community purposes. The service went not only to domestic subscribers but also to three neighbourhood centres, senior citizen housing projects, local government offices and high schools. The three neighbourhood centres were equipped with camera and other equipment which permitted 2-way communication between them. Programmes were transmitted two hours a day, five days a week, conceived and produced by senior citizens and representatives of local organizations. Senior citizens participated in virtually all aspects of the interactive cable system. A research report by Mitchell Moss (1977), concluded that the two-way cable system emerged as a means for the elderly to communicate with each other and with public agencies. It served important social and political purposes by reducing isolation and providing a forum for the elderly to participate in local government processes. Programming for citizen-government interaction proved particularly effective, allowing senior citizens to participate directly in public affairs without encountering the time and travel costs of visiting City Hall or the institutional and psychological obstacles to participating in formal public meetings. The overall level of information about urban conditions was increased for both citizens and public officials.

(Moss, Mitchell, 1977, Interactive Telecommunications and Local Community Processes, paper presented to a symposium on wideband distribution networks, Munich)

Final Note

None of the systems described above approach the potential of fibre-optic star-switched cable networks

APPENDIX 5

RELATIVE ADVANTAGES/DISADVANTAGES OF BROADBAND

CABLE OVER OTHER VIDEO TECHNOLOGIES

Relationship of Cable to Other Media:

Broadband Cable Television

Positive Comparative Advantages

(*means only if fibre-optic/
switch networks available)

Negative Comparative Advantages

Off-air Transmissions

Cable offers many more
channels.

Cable potentially offers
more choice.

*Cable allows for a much
higher degree of
interactivity.

*Cable has a higher potential
for 'narrowcasting'.

Cable usually requires less
regulation than off-air
transmissions because the
physical limits on channel
numbers are removed: this
in turn allows more scope
for experimentation.

Cable is suitable for locally-
originated and locally-
broadcast programming, and
offers far more capacity
for community use than
mainstream off-air
transmission.

Following from greater number
of channels cable also offers
more opportunity for dedicated
channels, including channels
devoted entirely to education.

Cable allows for possibility
of more than one voice track
for video programmes or for
client choice of different
sound tracks.

Given current broadcasting
infrastructure, off-air
transmissions allow for national
as well as regional coverage - cable
will not cover more than 50% of
country by year 2000.

Limitations on number of
channels, plus consequent
regulatory structure, may ensure
high quality within the capacity
available.

Low power television very suited
to community use.

Provides national publicity and
awareness of Open University.

Provides greater opportunity for
chance viewing of educational
programmes.

Advent of cable may result in
loss of national broadcast
facilities.

Satellite

Cable offers more likelihood
of many more channels than
satellite in short and
medium term.

Effective satellite
distribution may be dependent
on cable distribution of
satellite signals to
individual homes, rather than
siting of satellite dishes in
every home.

Satellite offers very widespread
geographical coverage, whereas cable
systems are limited by physical
extent of the cable networks.

Satellite convenient for
international broadcasting.

Positive Comparative
Advantages

*Cable has a much higher potential for interactivity.

Negative Comparative Advantages

Satellite may be suitable for interlinking of cable systems, or for distribution of certain channels to all

Video-cassette
and video-
cassette
recorder

Except for programming recorded in the home, onto a VCR, the video-cassette is not itself a means of distribution: it depends on other technologies for distribution: e.g. off-air transmission, library, van, post etc.

Cable distribution requires far fewer cassette copies for widespread impact.

Programmes provided by cable can be stored on a VCR if the subscriber chooses to do so

Cable gives greater likelihood of 'chance' or 'impulse' viewing which is not so likely with video-rental schemes or other video-distribution systems (apart from off-air transmission).

Cable has capacity to offer generous repeat facilities even on individual request.

*Cable offers potential for handling both programming and associated administrative functions (e.g. registration, fee-payment, monthly accounts etc.)

Cable gives possibility of a full-channel educational service providing a television 'learning environment'.

For high consumers of television services renting of video-cassettes may be less economic than cable subscriptions.

Video-cassette resource centres would potentially offer more client choice of programming.

Video-cassette recorder gives stop-start facility.

Video-cassette very suitable for private long-term storage.

For low consumers of television programming, video rental may be more economic than subscription to cable TV

Video-cassette ownership/rental currently more widespread than cable, and growing more rapidly than cable is likely to: cable may therefore face greater economic difficulties than anticipated.

Positive Comparative
Advantages

Negative Comparative Advantages

Cable allows for any mixture of live and pre-recorded programming.

*Cable provides access to on-line data facilities.

*Cable offers much more potential for interactivity

Videodisc

Cable allows any mix of live with pre-recorded programming.

*Cable offers interpersonal interactivity.

Cable allows access to on-line data services.

Cable allows for immediate updating.

Cable production would be cheaper than video-disc production.

Cable can be interfaced with videodisc, but length of client access to videodisc via cable would probably have to be controlled

Very high quality picture

Very durable storage quality.

Frame-stopping facilities.

Suitable for highly-structured learning frameworks, or for interactive learning within a pre-determined set of information, pictures, film etc.

Table 1 shows some of the comparative advantages and disadvantages of cable when compared with other media. In some cases, of course, cable shares certain advantages with other media, and in others there is a degree of potential complementarity between different media

APPENDIX 6

BROADBAND CABLE AND INTERACTIVITY

It is helpful to get away from the particular technical implementation details of cable networks and classify the degree of interactivity by looking purely at the data rate available back from the home to the service supplier. There are at least four obvious ranges of data rates:

- 1) 75-150 bit/sec: suitable for user typing, for interaction with local viewdata systems (for home banking, home shopping, home CAL, etc.).
- 2) 600-2400 bit/sec: suitable for telewriting (Cyclops), file transfer from home micro computers up to service provider (i.e. up loading of telesoftware).
- 3) ^{thousand} 16-64/bit/sec: suitable for speech, facsimile, usable slow-scan television.
- 4) 1 million bit/sec upwards: suitable for full motion colour video (depending how clever your compression system is!).

The most likely initial applications will fall into category (1). The bottleneck in categories (2) through (4) is not just of data rate; it is also to do with switching complexity. For an N subscriber cable system with say 20 service suppliers there are only $N \times 20$ possible connections. But for a user to user service (e.g. telephone) there are $N \times N$ possible connections; and N is likely to be 50 000 upwards even on one single cable system.

Despite the mathematics, services such as making local (speech) "telephone" calls on the cable will be highly attractive to subscribers. The tariff might be expected to be a fixed service fee (along the lines of the US "local calls are free" approach), because the cost of the cable network is largely (supposed to be) recovered from non-interactive applications. However, user to user interactive services are liable to require something very similar to a telephone exchange overlaid on the cable system, and sheer avoidance of congestion will put the usual pressure on users to make shorter calls.

However, we would expect tariffs to be lower than BT rates.

This "connect time" pressure is unlikely to be very severe at data rate bands (1) and (2), because existing data multiplexing technologies (such as packet switching) can provide very cost-effective switching at these rates.

User to user video switching will remain expensive for some considerable time.

Note that if there is no hourly rate levied by the cable operator for connection to an interactive service, many of the disadvantages of time-sharing (and advantages of micros) disappear! For example, business users are likely to be connected all day to the electronic mail service, so that they get instant notification of mail. (This is no more than happens currently with the more serious campus users of the Academic Computing Service.)

Pseudo-interactivity

Not all applications require true interactivity. For example, a full-channel teletext system could supply in excess of 10 000 different screens of information, with an average delay of a few seconds. This is only 4% of the current Prestel capacity, but it is the size of the current Optima database, and some 100 times the current Ceefax capacity. It is certainly enough to mount a worthwhile national news service. A second full-channel teletext system could provide a satisfactory local "viewdata" system (for local news, community events, transport information, and the like).

Certain channels could revert to full-channel teletext at off-peak times; for example the educational superstation could transmit telesoftware pages during the 2 am - 5 am shift when even the most dedicated OU student is likely to be asleep (or not studying, anyway); any moderately intelligent teletext decoder could look out for, and store, programs that it was instructed to accept.

One policy the OU may wish to adopt would be as follows:

- 1) The OU should encourage any measures to increase the interactivity of cable networks. (We do not believe that the OU has the detailed knowledge to make technical recommendations, nor would anyone listen if we did; but the technical implications of our views are likely to favour fibre optics and switched networks.) This will ensure that the OU computer system can potentially be connected to the networks.
- 2) The OU should connect its computer system in a phased, progressive way to the cable networks. It has already been recognised that substantial use of home terminals will allow the OU to run a more cost-effective administrative operation. (E.g. students type in change of address themselves, arrange home banking transfers for fees themselves, select courses themselves, all with immediate effect on our master database. It sounds brave, but is no more problematic than current home banking moves.) The aim could be succinctly described as "Optel on the cable". But in order to achieve this, we have actually got to get a service niche, on all the cable systems. This is going to be easiest in the early days when spare bandwidth is more available due to the lack of "commercial" programmes and services. We might make a service niche a condition of our "educational superstation" deal; in any event, such a niche would be useful for programme feedback and follow-up/remedial CAL activities associated with TV programmes.

APPENDIX 7

WHAT KIND OF PROGRAMMING INITIATIVES MIGHT
THE OPEN UNIVERSITY TAKE IN RELATION
TO CABLE?

There is a wide range of possibilities. Some examples of basic categories of 'cable venture' are given below:

- Completely new courses involving television components for distribution via cable systems (all systems, some, or only one). These might be produced in collaboration with other institutions. They could fall within the CE, undergraduate or postgraduate programmes. Implicit here is the recognition that the Open University has a role in the provision of educational materials for markets that are local or at any rate less than nation-wide, and by means which do not necessarily extend to all members of a given population. Such new courses might be quite simple: e.g. 'talking head' lectures or seminars, with a limited back-up of printed material and a set reading list. In this way the very original conception of a 'University of the Air' could be revived: i.e. the notion that traditional HE formats could be transplanted to distance learning contexts for part-time learners. The interactive facility of cable television and radio could be exploited to provide the element of interpersonal contact between teachers and students.
- New courses based on existing materials, but used in new ways. For example, the television components of an existing undergraduate course could be put together in 'normal' sequence, for cable distribution, supported by a specially prepared printed unit, and converting the original undergraduate status to a short CE course based mainly on television study. Once it was accepted that cable distribution was a useful venture, course teams could design their television components both for use in relation to undergraduate materials and in relation to a separate, self-contained cable-TV course.
- New programmes made in relation to existing materials or courses: e.g. local television programmes exploring the local dimensions of a national course; use of interactive format as a means of tutorial support; promotional programming designed to advertise particular courses and/or the Open University in general.
- Existing materials used on a 'one-off' basis, individually or in 'normal' sequence, in order to extend the market for OU video materials; to introduce or to publicize the Open University or any one of its courses; to boost viewing of O.U. television courses amongst O.U. students.

- Innovative ventures and 'pilot' projects: perhaps involving interactivity (e.g. interactive hook-ups between different study centres in any given area), or to experiment with interfacing of broadband cable systems with the third generation of CYCLOPS (involving home-based computer terminals) or with other computer equipment; student or regional productions etc.
- The development of videotex systems related to O.U. courses or more generally to staff/student needs.

APPENDIX 8

AN OPEN UNIVERSITY EDUCATIONAL CHANNEL?

Implicit in the list of programme categories that the O.U. might wish to consider in relation to cable in Appendix 7 is the notion that these initiatives would be 'one-off' incremental but unsystematic developments, possibly occurring in response to uncoordinated requests from different cable operators for materials which they would want to put together as they saw best. The opposite end of the spectrum is the idea that the O.U. might itself put together an 'educational channel' possibly in conjunction with other educational institutions, for sale to cable systems up and down the country.

Such a channel could be put together with a mixture of existing and specially-produced material (including promotional slots and material designed to bring students into the Open University's regular undergraduate programme, and various reconfigurations of existing material for new courses, etc.) There would be various possibilities of integration with print and tutorial resources, as well as longer-term possibilities in relation to telesoftware, computer hook-ups, digital interactivity and so on. Such a venture would very likely involve collaboration with other institutions, and this would greatly improve its attraction to cable operators and compete with similar ventures attempted by Rediffusion or other major operators. Collaboration might involve the design of a channel which would cater for regional or local variations or inputs. Collaboration could take a number of forms: e.g. orientation of O.U. television production to locally-produced courses; locally-produced options for 'modular' O.U. undergraduate, CE or taught higher degree of diploma course, whether produced by regional offices, or by local educational institutions running courses in collaboration with the O.U.; O.U. productions designed to form part of the distance-teaching strategy of some other organization etc.

What might be the advantages of this sort of proactive strategy in relation to cable?: (a) The O.U. would be more in control over the general context within which its materials were given cable transmission, better able to determine, through negotiation, how many hours of TV it wanted for itself, where, when and what sort of programming, and better able to

insist, for example, that the entire package should be bought and used as bought, or that slots made available for local input from local educational 'partners' should be used only for that purpose, etc.; (b) The O.U. would be in a better position to transform what could be a competitive situation (e.g. arising from hook-ups between university/polytechnic audi-visual studios and local commercial cable operations for distribution of educational programming in local distance teaching ventures) to a collaborative situation with the O.U. developing a 'resource' role for local initiatives while retaining its identity as the national provider of distance teaching undergraduate courses (and persuading the government that that is how things should stay); (c) O.U. investment and involvement in its own cable network could better equip and prepare it for experimentation with interactive possibilities, link-ups with CYCLOPS, viewdata systems etc., and place it in a stronger position to negotiate for this kind of access locally.; (d) institutionally it would develop its image of being at the forefront of educational change, in communications as well as more generally.; (e) its own cable package would earn it additional revenue from sales to cable systems; from new students attracted by the cable exposure to existing courses or to new courses made up either from new materials or 'reconfigured' existing material. As was argued in Appendix 7 new courses need not be expensive.

The O.U. has sufficient stocks of educational film, sufficient new production, sufficient production resources, sufficient academic manpower, good links with educational institutions in all regions, a head-start in the credit-transfer business, etc. etc. to make this idea at least worth thinking about. There may also exist sufficient production manpower for new initiatives. Cable is likely to go first of all to the wealthier homes of the middle classes and working class 'aristocracy', possibly good customers for new educational products. Whatever the O.U. did through cable might also be used eventually in satellite initiatives - although satellite would not offer the same degree of access, nor the possibility of interactivity or of regional variation.

APPENDIX 9

REGIONAL IMPLICATIONS

Cable television is 'local' in the following senses:

- (a) its future growth is likely to be on the basis of local developments in the major cities (so long as the government prefers to rest the whole infrastructure of broadband cable development on private investment in its entertainment potential);
- (b) cable television has always been proclaimed as an essentially local medium, and even if the system of cable networks did come to be dominated by giant multinational companies and syndicated services, it is likely there would always be capacity and demand for local access and community programming; its 'local' nature would be considerably greater given the appropriate kind of regulatory structure;
- (c) it has important 'narrowcasting' facilities.

The most likely initial scenario, then, is one on which major new initiatives occur in different cities, under different models of ownership and philosophy. This could lead to a situation where approaches to the Open University might take place at least as much through the regions as through the centre.

For instance, local cable consortia might approach regional offices of the OU with requests for existing programming, or invitations to participate in the operations of local consortia, to offer consultancy services or to assist in programme production, to engage in liaison with educational institutions in the regions, to lend its weight in local battles over franchising applications, procedures etc.

The major issue that arises for the Open University, therefore, is how far there should be a central policy with respect to the kind of approaches that might be anticipated, and how far any such policy should leave room for regional initiative and discretion. There would be considerable scope, for example, for involvement of regional staff in:

- (i) the monitoring of developments in the relationship between local cable operators and local educational institutions;
- (ii) the generation of ideas for new courses involving local educational institutions, the Open University and existing/original Open University productions;

- (iii) collaboration with other educational institutions in putting together media packages for local course provision, etc.

Activities such as these would obviously have implications for funding. Could there be a central fund for cable initiatives to which regions would apply? An overseeing committee would then be in a position to monitor initiatives coming from the regions, but without stamping out the scope for regional initiative. Funding might take place on condition that there would be long-run return on the investment through institutional payments to the Open University, student fees, fees paid by cable operators etc.

APPENDIX 10

COLLABORATION WITH OTHER INSTITUTIONS:

SOME IMPLICATIONS

The impact of cable and other new media for the Open University could be a competitive one. A consortia of educational institutions in the London area, for example, could conceivably employ cable access in such a way that London residents looking to educational opportunities by distance-learning would be more attracted to locally-originated courses than to those of the Open University. At least one of the major cable companies already has plans to link up the audio-visual departments of polytechnics and universities to its commercial networks; an inter-institutional fibre-optic link-up has already been approved for seven of London's medical schools; the Polytechnic of the South Bank has already linked up with Visionhire for the cabling of educational programmes in connection with a south London open-access strategy involving other educational institutions in the south London area; Rediffusion, meanwhile, is considering proposals for its own educational channel for sale to different cable systems. To some extent the competitive impact might depend on whether central government funding will recognise the 'distant-taught' student as having some kind of status in 'full-time equivalent terms'. If cable was successful simply in attracting new kinds of student onto traditional college courses it could represent a competitive threat. It is clear that much speculative thought is being given in further and higher education to the development of distance-teaching strategies, partly from fear of the possibility of a slump in the size of the traditional clientele from the mid-1980s onwards, and consequent recognition of the desirability of attracting older students while expanding the range and means of provision. Money is short, but this hurdle could be surmounted by the development of consortia; with the help of outside funding such as through the Open Tech programme; and with the design of course strategies that would pay their own way.

Collaboration with other institutions would provide a means whereby the Open University could offer the benefits of its teaching resources and experience in return for involvement in the development of local initiatives or even in some national initiatives (as in areas of provision for which the OU makes no current contribution). A number of possibilities suggest themselves: e.g. the Open University could develop a 'network' role as in the Knowledge Network of British Columbia (see Appendix 4); it could provide film and/or other teaching materials while local institutions provided tuition; the Open University and other institutions could jointly produce materials with the latter taking responsibility for local tuition while the Open University

reserved the right to exploit the same materials in different regions and for different enterprises; the Open University could act simply as a consultant/facilitator in local initiatives; it could sponsor and recognize locally-devised 'telecourses' or their equivalent as counting towards O.U. credits, especially where such courses were seen as providing suitable preparatory work for Open University degree study.

APPENDIX 11

OTHER RESPONSES TO HUNT

COMMITTEE

1. Council for Educational Technology
2. Educational Television Association
3. Consumer Council,



Council for Educational Technology

Statement on the development of cable television

The Council for Educational Technology is the UK central body for the development and application of educational technology to all aspects of education and training.

A major part of CET's work is in exploring and promoting an understanding of the implications and consequences for education and training of the extensive use of new information technologies. To aid it in this work, the Council has set up a Communications Systems Advisory Panel (COMSAP): a small group of experts in the fields of education and communication systems. Over the past few years, COMSAP has considered the educational benefits of developments such as citizens' band radio, teleconferencing, videotex, direct broadcasting by satellite, and other technological topics of educational interest. The result of these considerations has been the instigation of a wide-ranging developmental programme of activities exploring many of these areas. It is now embarking on a major study of the convergence of such technologies and their implications for the creation of new education and training environments.

The Council is therefore speaking from a position of experience and authority when considering the benefits of new technology for education and training.

Recommendations

- 1 Whether or not there is a demand for a further expansion in the number of video channels available for entertainment purposes, the Council can see no significant benefit to education and training in the provision of cable systems capable of carrying a strictly limited number of channels, having a limited interactive capability and covering only certain areas of the country.

The education and training need, in common, we suspect, with the industrial and commercial need, is for an integrated communication network, capable of carrying extensive digital traffic including not only video but also data traffic and computer software, having a high interactive capability and reaching the greater part of the population. Essentially this points to the importance of "star" rather than "tree and branch" systems and of the extended use of fibre optics technology. (For a detailed consideration of the issues involved see the report of the Economic Development Committee for the Electrical Engineering Industry "Cable TV systems and the insulated wires and cables industry").

It is important to recognize that the modernization of the telecommunications system will, through the use of wide band channels and electronic exchanges, provide the essential elements of such a system, and one way of providing a national network would be to accelerate this process. It would certainly be a questionable investment of resources if networks without these qualities were created solely for entertainment television. A national cable network would require additionally that the wide band facilities were carried through to the user terminal.

- 2 The Council therefore welcomes the Government's intention to offer encouragement to the providers of more advanced systems. However, it does appear that the Government is committed to an area franchise system, and in that case it is necessary, if education and training applications are to be carried (Hunt Report, para. 67), that the franchise requires the operator to make one or more channels available for this purpose, and that the regulatory body includes education and training interests who can monitor the provision. Since such channels are not likely to be revenue earning, they will probably have to be provided free of charge, at the cost of the other channels.
- 3 In some areas there may be local needs which could be served by the provision of course materials on such a channel, but the relatively low proportion of the population likely to be reached, even within a franchise area, suggests that such cases will be rare. The main use for an education and training channel on such networks is likely to be for the distribution of information about education and training opportunities.
- 4 Local education authorities and institutions with television production facilities should be encouraged to maintain and develop these facilities for the generation of material for use on cable systems.
- 5 The Council suggests that the use of "electronic locks" to control access to unsuitable material needs to be reconsidered. Any system simple enough to be used by the adult population is likely to be simple enough for the average computer literate young person to overcome.

The development of computer control systems and information technology is radically changing society. Persistent unemployment, an increase in leisure time, and a major change in the skill base required by industry are already placing increased demands on the education and training system. It must be recognised that the decision on the nature of the cable system provided will in all probability set the pattern for 20 or 30 years at least. While we cannot foresee all the changes in educational and training requirements for that far ahead, we can be certain of the need for flexible and interactive systems.

In the Council's view there is a great need for, and great educational and training potential in, a national wide band communication service. To gain the flexibility that can maximise the potential of a broad-based educational network, it is essential that the bandwidth provided by the system support the interconnection of computer programs, video material, mailbox facilities, electronic text transmission, and full two-way interactivity.

All of these will benefit students learning at home or at work, but can be provided only if the cable network installed is a nationwide, switched, wide band system with wide band connection right to the user terminal, and with a high upstream capacity - the amount of information capable of being carried back from the subscriber to the headend. This capability can in the longer term only be efficiently and economically provided by fibre-optics.

CET recognises that there are still some developmental problems to be solved before star networks using fibre-optic technology can practicably provide all these facilities, but would point out that traditional co-axial tree-and-branch networks cannot do so. Britain is in the forefront of development and is in the position to opt now for the basis of the most advanced cable system in the world, or the most quickly obsolescent.

It should be noted that the recommendation of the Part Committee on the system to be adopted for satellite transmission could mean that satellite signals could only be redistributed over a wide band network.

The Council believes that the developments resulting from the Government's own £25 million aid programme for the fibre-optics industry launched 15 months ago (and recently increased by £15 million together with a further £15 million for long-term research projects) and a decision taken now for a mass Government-backed commitment to this technology would ensure that the long-term costs of a fibre-optic system are comparable to the known costs of the co-axial system. The system then installed will have the capability of meeting long-term future requirements, including those of education and training.

CET acknowledges that current estimates indicate that this decision could delay the availability of the system for a short period, but considers the long-term national benefits worthwhile. The complex inter-relationship of the different decisions in respect of satellite broadcasting, cable systems, allocation of broadcast frequencies and the development of the national telecommunications network is such that there is a strong case for their being considered as part of an overall development plan. It would be ironic if the British Telecom digital exchanges, already scheduled for installation during this decade, could offer a greater flexibility and range of facilities than the embryonic cable network.

The Hunt Inquiry found general agreement that "investment in cable television for entertainment purposes will be the necessary base to which the interactive services of economic benefit to business and the individual will be added" (para. 5). Although CET's interests are only in education and training and not in the entertainment or business markets, this statement and the general priority given in the Inquiry Report to the necessity for cable development to be self-financing give grave cause for concern. Without some form of Government intervention, such a

requirement is certain to lead to only limited areas being cabled, ie, those with a sufficiently high population density and per capita income to ensure a rapid return for a high capital investment. Within the cable areas, the service will only be taken up by a proportion of the population. This limitation on the availability of the service affects the suitability of such systems for education and training.

There is, therefore, a significant difference between the educational and training use of a national wide band interactive system and that of limited franchise operations. With the latter, it is necessary that operators are required to provide, as a condition of their franchise, free channels for education and training.

Without such a mandate, it is certain that a requirement for self-financing will lead to the initial saturation of channels with entertainment and commercial programmes and ventures, material generally considered to offer the lowest risk with higher potential gain. Such a beginning is likely so to colour public and entrepreneurial expectations of the system that it will become increasingly difficult for education and training ever to gain a significant foothold in the network.

The use of the educational and training channels on limited franchise systems will, in the main, be limited to the list of information about education and training opportunities, although in some areas there may be local or special needs that can be met by the provision of course materials over the cable. However, this is essentially only adopting an additional distribution system to widen the availability of already existing material. A more important use of such channels would be for limited pilot experiments in new educational and training applications.

The Council had indicated its concern on these and other issues in its initial submission to the Hunt Inquiry.

Although the Inquiry has emphasised that, in awarding a franchise, "there should be a presumption that all systems should provide children's programmes, education and a community service" (para. 67), it has recommended that no specific obligations to provide these services should apply. The Report indicates that the Inquiry believed that sufficient educational material would be available as a result of "the carrying of the public broadcasting services" (para. 66); however, since the public networks will have as their major remit the provision of an off-air broadcasting service, none of this material can make use of the interactive potential of a cable system.

Such requirements as may exist to comply with a presumption for the provision of educational material must be considered in the light of the Inquiry's recommendations for regulation and oversight. The regulatory body suggested by the Inquiry would be a franchising authority with a reactive oversight role only. No provision has been made for monitoring of output except in the case of complaint, and no controls recommended for dealing with the failure of a franchised operator to offer the diversity of programming originally specified in a franchise application. It would be essential that the regulatory body contain representatives of education and training interests to ensure its capacity to oversee this provision.

On the question of the availability of suitable material, the Council would point out that there is already a wealth of existing television material produced by local authorities, educational institutions and commercial organisations available for immediate broadcast or for editing into an interactive format.

Additionally, there still exists in this country a number of education-based video production facilities fully capable of generating educational material for use on cable. As the use of such facilities could provide an economical educational input to the cable system, encouragement should be given to such organisations to maintain and develop their facilities.

The Council has one further technological concern arising from the Hunt Inquiry's belief that an electronic password facility would prevent access by children to material considered by parents to be offensive. CET considers that this naivete can only come from being seriously out of touch with the technological sophistication possessed by the majority of school students. Many children now regularly use computers in their normal school activities and the experience of computer studies teachers suggests that such an "electronic lock" would present little difficulty to the growing number of expert student programmers.

CH/GH/BMcL
January 1983
B1(16)

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22 November 1982

CABLE AND THE CONSUMER

1. My Council's comments below refer to the Hunt Report, but are not limited to it, as a number of significant issues lay outside the Report's terms of reference.
2. My Council's job is to identify and represent the needs of individual consumers. That is our starting point in relation to cable as it is to any other policy issue. Our aim is to maximise the benefits that cable developments bring to consumers, and minimise the harm. We reiterate strongly the view we put to the Hunt Committee that policy for the future should start from the viewpoint of the individual consumer, with the TV and/or cable receiver seen as a multi-purpose, multi-channel box, for the entertainment, information and functional use of the consumer. This is not just a piece of abstract philosophy, but the starting point for any sensible policy. If the consumer's needs are not at the heart of any expansion of cable, the risk of failure is correspondingly greater.
3. There are four main benefits that cable can bring to the consumer. First, a greatly increased choice of entertainment. Second, access to a computerised databank of up-to-date information (on the Prestel model). Third, the use of cable for home banking, direct shopping from home and other functions. Fourth, the use of cable by and for the local communities.

GENERAL STRATEGY

4. Ideally, we would like to see a fully fledged, interactive cable system available to every home in the country. There are of course differing views as to the extent to which consumers are likely to respond to the opportunities of cable and the price they are prepared to pay. Whatever the likely extent or speed of cable development, decisions taken by the Government in the near future should not be such that in the longer-term they prove to be barriers to the development either of a comprehensive integrated broadband cable network or, when cable is unsuitable, adequate alternatives via Viewdata or satellite. It is regrettable that the Hunt Committee's remit prevented consideration of new technologies as a whole, since it is in their convergence that the most effective network of communication may ultimately be found rather than in the use of one technology alone.

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5. There is a trade-off between the speed of cable development and its ultimate extent and usefulness to the consumer. If the Government decides that cable should be expanded as rapidly as the market will allow, this may mean the installation of cable systems based on a tree-and-branch topology. As representatives of the interests of UK consumers, it is not our direct concern that this will involve massive imports from the USA, and thus substantially dilute the boost that cable could give to British industry. However, the rapid installation of a series of systems with limited channel capacity and interactive capability, and which are often mutually incompatible, is absolutely contrary to the interests of consumers. We will not comment in detail on the issue of technical standards, but it seems clear that all new installations should be based on a minimalist or switched topology if the longer term benefits of cable both to the individual consumer and to British industry are to be maximised.
6. Our other anxiety about a rapid and wholly commercially oriented development of cable is that it will be socially divisive. Only those areas which are prosperous and/or densely populated are likely to be cabled, at least in the earlier stages. Yet the longer term benefits of cable are likely to be greatest for the less well off, the elderly, the housebound and the isolated. We realise there is no easy answer to this, but, as a minimum, we strongly support the Hunt Report's approach in paras 86(a) and (b), to avoid "cherry-picking" between and within franchise areas.
7. It is essential that the Government should state as a matter of policy that it is the intention to cable (or make alternative provision for) all areas of the country. Naturally, this cannot be done overnight, but the statement of intention will assuage growing anxiety about the erosion of the public service concept which has made British broadcasting the best in the world.

ADVERTISING AND SPONSORSHIP

8. We accept the Hunt Committee view (para. 49) that "... the likely range of advertising on cable ... will preclude the external pre-vetting of advertisements..." However, the proposed code of practice for advertising will prove to be inadequate as a control unless the cable authority has the statutory power to enforce it. The current code of advertising practice for ITV works because the IBA is statutorily required to draw up and enforce such a code. The same should apply to the new cable authority, with the difference that it should have available a range of defined sanctions which it can use if the code is not complied with. These will be necessary because the cable authority will not, for technological reasons, be able to use the powerful sanction which is available to the IBA - refusal to transmit an advertisement.
9. Consumers should be able to distinguish clearly between editorial matter (i.e. programmes) and advertising. This applies just as much to cable as to other media. The commercial sponsorship of programmes envisaged in the Hunt Report (para. 49) would inevitably blur this important requirement and could lead to sponsors being able to influence programme content. A clear distinction should be made between sponsorship of an event which may be the subject of a programme and sponsorship of a programme itself. This distinction already applies in existing broadcasting services. It should be maintained in cable.

DUTIES AND POWERS OF THE CABLE AUTHORITY

10. We support the principle underlying the Hunt Report's approach to regulation, that it should be kept to the necessary minimum so as not to impede unnecessarily the development of cable. However, there are three ways in which the cable authority's proposed powers and duties should be strengthened:
 - a. Monitoring programmes. Obviously, it would be impossible to monitor 100% - or perhaps even 10% - of cable programmes. However, the cable authority should have a duty to ensure that the terms of franchise agreements are adhered to and that the bids on which franchises are awarded do not prove to have been false prospectuses.
 - b. Advertising. See para. 8 of this letter above.
 - c. Sanctions. We agree with the Hunt Report (para. 101) that less drastic sanctions are needed in addition to the ultimate penalty of loss of franchise. However, we do not accept that financial penalties are inappropriate, as financial gain is likely to be the incentive for operators to ignore the authority's requirements.

PUBLIC FRANCHISE BIDS

11. Before any decisions are taken about the award of franchises, it is important that there should be a period during which the implications of the franchise bid or bids can be discussed in the community concerned. All franchise bids should be published (either by the cable authority or by the bidders), and there should be a three month gap between such publication and the decision to award a franchise. This would allow time for local discussion and representations.

MINIMUM FRANCHISE REQUIREMENTS

12. While the Hunt Report lists (para. 86) the factors that should be taken account of in the franchise decision, it does not go far enough in specifying the minimum requirements that should be included in all franchise bids. These should be:
 - a. Conformity with minimum technical standards, especially in relation to the topology of the system, channel capacity and interactive capability.
 - b. Provision of all broadcast television services servicing the franchise area, present or future (see Hunt Report, para. 58).
 - c. A minimum of 5 per cent of the operator's cable revenue should be spent on community programmes or access by local groups.
 - d. Provision for consultation with local consumers, for example through a consumer committee or local meetings.
 - e. Protection of the privacy of consumers, especially in relation to the interactive use of cable for polling, financial transactions and direct selling.

MONOPOLY

13. The Hunt Report considers (paras. 28 and 29) that the cable authority can take care of the possible development of local and national monopolies through its control over franchises. The Report also sees ".... little danger of a monopoly arising from excessive ownership of cable franchises throughout the country..." We do not agree. Only a few large companies will have the expertise and financial resources to be cable providers. These large companies will almost certainly be involved in cable operation and there will almost certainly be a tendency towards the concentration of economic power. The vigilance of the proposed cable authority against monopoly needs to be backed by a more formal safeguard. Existing monopoly legislation provides an adequate safeguard and cable providers and operators should not be exempted from it.
14. Consumers should have a choice of receiving and other equipment for use with cable. Cable providers or operators should not be able to use their technical or marketing power to create local monopolies in cable receivers in the home.

We shall be glad to discuss these points with you or with your officials. I am writing similarly to the Minister of State for Technology.

Mrs Joan Macintosh CBE
Vice-Chairman

SUBMISSION BY THE NATIONAL CONSUMER COUNCIL TO THE
INQUIRY INTO CABLE EXPANSION AND BROADCASTING POLICY

LIMITATION OF TERMS OF REFERENCE

- 1.1 The limitation of the terms of reference of the inquiry into the implications for broadcasting policy of an expansion of cable systems presents a major difficulty. While broadcasting may be the service most obviously affected in the short run, the other potential uses of cable may well be more important in the longer term. It is artificial to consider broadcasting developments alone without putting them in context.
- 1.2 In commenting to Government on the Home Office Report on Direct Broadcasting by Satellite (DBS), we said that it was asking for trouble to consider broadcasting in isolation from the use of DBS channels for information and other communication services. We were not alone in making this point, yet no reasons have been given for continuing to treat broadcasting as something apart when cable systems are being discussed.
- 1.3 We cannot but think that the limited terms of reference of the inquiry are yet another unfortunate consequence of the present division of responsibilities within Government. The Information Technology Advisory Panel pointed to this problem in para 8.12 of its Report. It is highly regrettable that the Government did not deal with this central issue before the present inquiry was launched, so that the terms of reference could have been more widely and usefully drawn.

TIME SCALE OF THE INQUIRY

- 2.1 We are concerned at the speed with which the inquiry is being carried out and the shortage of time available for us and for other organisations representing the interests of consumers

to consider the issues raised. The arguments for rapid decisions set out in the Panel's Report are strong ones. However, the interests of existing commercial cable operators seem to have been given undue weight. Although the number of commercial cable subscribers is declining, the financial interests of existing operators should not be paramount when weighed against the economic and social implications of a major expansion of cable systems. In any case, the Government's approval in principle of a two-channel DBS service starting in 1986, announced in March 1982, should give existing operators sufficient encouragement for the moment.

- 2.2 We do not wish to see the key decisions unduly delayed, but the time scale of the inquiry is much too short. The Report of the Panel includes an examination of the economic and industrial aspects of an expansion of cable systems. It does not pretend to deal with the social aspects, which are particularly important in relation to the future of broadcasting. Yet it is these aspects which need to be identified, explored and evaluated - in public discussion as well as in private cabal - particularly when the consequences are so far reaching
- 2.3 We know we are not alone in criticising the haste with which this inquiry is being conducted and that our anxiety is shared not only by other organisations concerned with the consequences for consumers of any decisions that are taken, but also by advertising and commercial interests.

CABLE AND THE INDIVIDUAL CONSUMER

- 3.1 The National Consumer Council's job - one which we have been given by Government - is to identify and represent the interests of individual consumers. Our remit extends to the whole range of both public and private sector services. Our starting point is always the individual consumer. So far as cable systems are concerned, our objective is to optimise the benefits they

will bring to the individual consumer. We reiterate our strongly held view that consideration of the future should start from the consumer end, with the TV and/or cable receiver seen as a multi-purpose, multi-channel entertainment and information box, capable of being used actively or passively. What difference will the expansion of cable systems make to the lives of individual consumers and the communities in which they live? How can developments be directed so that the advantages are maximised and the disadvantages minimised? How can the systems be arranged so that the choices of individual consumers can most effectively influence their development? We urge that these questions be kept constantly in mind during the course of the inquiry.

IS A REGULATORY STRUCTURE NECESSARY?

- 4.1 The National Consumer Council is committed to the principle that consumers should have the greatest practicable freedom of choice, in relation to broadcasting as much as to goods and other services. We therefore welcome the enhancement of consumer choice that an expansion of cable systems could bring. In expressing this welcome, we are reflecting the dissatisfaction of many consumers with the choice of television programmes currently available. In the Consumer Concerns Survey we carried out, 41 per cent of a national random sample of adults expressed some dissatisfaction with the choice of television channels and programmes.
- 4.2 The argument for deregulation is a strong one, if broadcasting services were to be dominated by consumer choice. We would only favour regulation if we considered that, on balance, deregulation was likely to harm the interests of consumers. Those interests are considered below under the headings of programme variety, public service broadcasting, advertising and monopoly.

Programme variety

- 4.3 An increase in the number of broadcasting channels does not necessarily bring more consumer choice. If all the channels transmitted the same kind of material, there would be little or no net benefit to consumers. It is impossible to make a confident forecast as to whether or not this would happen in an unregulated market. One powerful factor to which little attention has been paid is the understandable ambition of programme makers and owners, including the BBC and the television companies, to maximise the profits they can get from repeated showing of existing material. The initial costs of producing original material are high in relation to the marginal costs of repeated showings. The temptation to reuse material again and again must be strong. Our argument against this is not just an aesthetic one, though as one respondent in our Consumer Concerns Survey said about Bogart's appearances on TV: "I've seen The African Queen so many times I feel I've been up the river with him"); it is that high levels of profitability could be obtained from relatively small audiences once the original production or purchase costs had been recouped. In broadcasting, profitability does not necessarily reflect consumer choice.
- 4.4 It is therefore an ominous sign for the future that current BBC plans for two new DBS channels include one channel of "the best of BBC1 and BBC2" and a second, subscription channel showing feature films. We can understand the BBC's desire to keep its costs down, but for the individual consumer, this offers little more than a stale rehash of material that is already in the can.
- 4.5 So far as programme variety is concerned, therefore, our conclusion is that some degree of regulatory control may be necessary to ensure this, but it is not possible to be certain about this in advance. We believe there should be initial provision for regulation but that the degree to which this is used should depend on experience. In the meantime, there should be close consultation between cable operators, users and the regulatory authority.

Public service broadcasting

- 4.6 The concept of public service broadcasting has been widely used in discussions of broadcasting policy - and will continue to be used. It is not a simple concept and it tends to be involved in a wide variety of causes. The fact that it is difficult to define does not diminish its importance. From the consumer's point of view, there are four significant components embodied in public service broadcasting. First, it enhances a sense of common identity, of community, of shared participation in national events. Second, it involves "minimum standards" (whatever the arguments about the level at which such standards should be pitched). Third, it leads to a high degree of public confidence in the broadcasting media. Fourth, that while profitability is a perfectly proper criterion, it should not be the only one: the right of access to broadcast information of high standards of accuracy and impartiality is a precious one.

- 4.7 There is a remarkable degree of agreement that public service broadcasting has made a valuable contribution to the community and to the lives of individuals in this country. This is a view which is held abroad as well as in the UK. We are reluctant to see it jettisoned in any expansion of cable systems. A similar concept should be embodied in the terms of reference of any regulatory or supervisory authority, though we recognise that putting it into practice would present many complex problems.

Advertising

- 4.8 Would regulation be needed to ensure that material broadcast by cable is not offensive and that any advertisements are not untruthful or misleading? We do not have views on the control of offensive material but we do on advertising. When commercial television started in 1954, Parliament took the view that it was not possible to embody in primary legislation all the safeguards that might be necessary to ensure that viewers' confidence in the advertisements they saw on the screen was not abused. The IBA was therefore given the statutory responsibilities of drawing up a code governing television advertising and of ensuring compliance with that code.

4.9 In practice, the control of advertising on television has involved a considerable measure of self-regulation by the programme companies. We would agree that the control system has, in general, worked reasonably well, but a powerful factor has been that an uncompromising final sanction rested with the IBA. If it thought that an advertisement did not comply with its code, it could refuse to transmit it. The fact that the IBA has seldom had to use this sanction in no way devalues its force - indeed, it demonstrates its strength.

4.10 The recommendation in the Panel's Report (para 8.11 (iv)) that "The Government should urge cable operators and programme providers to set up effective means of self-regulation, after the manner of the advertising or newspaper industries" fails to get to the root of the matter on sanctions. Our view is that there is an overwhelming case for a formal regulatory function (and accompanying sanctions) in relation to advertising control. We are concerned, for instance, about the possible development, on the American model, of sponsored programmes, or of programmes in which the editorial and advertising content are indistinguishable - so-called "wall to wall" advertising.

4.11 This case is strengthened by the possibility that in time some advertising (as well as programme material) will originate abroad and will reach UK consumers via DBS either direct or with cable distribution as the final link. In other European countries, self-regulation of advertising either does not exist at all, or, where it does exist, is very much less effective than in the UK. Given the difficulties there are in establishing self-regulatory control at national level, it seems quite unrealistic to expect a self-regulatory system with effective sanctions to be established supranationally.

Monopoly

4.12 It is inevitable that cable laying and cable operation will be at least local monopolies, possibly integrated into larger geographical or vertical groups. The economic damage monopoly is liable to cause, will be compounded if the various functions are not separated (see 7 below).

The existing institutional and legislative control of monopolies is not designed to deal with the complexity of the cable situation. Any regulatory functions should include adequate powers to deal with the abuses which monopoly power can cause.

- 4.13 Our conclusion on the need for regulation is that it will certainly be necessary to control monopoly power and advertising and to ensure that the concept of public service broadcasting is maintained. It may also be needed to ensure programme variety. It should not, however, be used to limit consumer choice unnecessarily.

FINANCES

- 5.1 We have not had enough time to consider in detail how cable systems could best be financed and what the flow of funds would be between the various parties. We can see no objection to individual consumers paying directly on a subscription or programme basis and indirectly through advertising. However, the future financing of the BBC needs serious consideration: the licence fee method of raising revenue would carry little conviction in an era of cable.

REQUIREMENT ON CABLE OPERATORS TO RELAY BBC AND IBA SERVICES

- 6.1 In principle, the present requirement on cable operators to relay BBC and IBA television services should be retained. There is a case for waiving this requirement for existing cable operators until they can lay down wideband cable, to enable them to distribute subscription TV and other services. However, during this period they should be under an obligation to provide their consumers with an alternative way of receiving BBC and IBA television services.

SHOULD CABLE OPERATORS PROVIDE PROGRAMMES?

- 7.1 In its Report, the Panel argues (para 6.22) that "...speedy investment decisions can only be made if a single individual or organisation is permitted to take overall responsibility for providing cable services, including both the physical infrastructure and the programme material, in one area." The Panel goes on to acknowledge that, while there are "regulatory arguments" for the separation of the cable operation and programming functions, this would "...inhibit the development of industry in its critical formative years." This is another example of the overwhelming importance attached by the Panel to commercial economic and industrial factors, to the neglect of both social factors and the needs of the individual consumer.
- 7.2 We do not see how there could be effective protection against the very real dangers of a monopoly of information supply if the functions of cable operation and programme provider are combined. Nor do we see how any regulatory authority could apply any ultimate sanction (for example, non-renewal of a licence) against a programme provider who also owned or operated the cable system in any area. In the last resort a combined cable operator and programme provider could not be closed down without the service being seriously damaged.
- 7.3 At a working level, competition is most likely to be stimulated by requiring cable operators to search out the best programme makers. Also, cable operators would be likely to be more severe judges of programmes not made by themselves.
- 7.4 The Panel Report identifies the two functions of cable operation and programme provision. There are however the other functions which need to be examined - cable laying and the supply of the TV and/or cable receiver in the consumer's home.

7.5

Our starting point is that the consumer and the country are best protected from the economic damage that monopoly brings if all four functions are kept separate. In particular, the consumer should have freedom of choice as to which equipment he or she wants to install in the home - and which supplier it comes from.

7.6

So far as cable laying is concerned, one option that should remain open at this stage is that BT, possibly in conjunction with a private consortium, should lay the cable for the whole country to a sophisticated technical standard - in particular, with the maximum number of channels, to allow for future developments. This need not necessarily involve the investment of public money. In other contexts we have repeatedly pressed for the nationalised industries to be allowed access to private investment funds. The expansion of cable services would be an admirable opportunity to put this into practice.

7.7

However local franchises are awarded, the allocation methods should be spelled out in a published set of criteria. These criteria should themselves be the subject of public discussion and should provide, for instance that:

- (a) The franchise bids themselves should be published, and in sufficient time for public discussion of them, before decisions are taken: public hearings should be held;
- (b) The system used should be designed to avoid "cherry-picking" - that is, only those franchises which seemed to offer immediate and/or high profitability would be taken up, leaving the rest of the country fallow. This would be socially divisive: the areas that would suffer would be poorer urban districts and rural areas;
- (c) Provision should be made for continued consultation between cable operators and local community users both before and after franchises are allocated;

- (d) Subscribers should have their privacy protected, especially in relation to the interactive use of cable for polling, direct selling and financial transactions;
- (e) Local franchise monopolies should not be used as building bricks for constructing more powerful regional or national monopolies;
- (f) Public or community access to cable channels should be provided for in all franchise agreements. US experience has been that special interest and community groups have been able to make a valuable and highly regarded contribution to the development of the new medium;
- (g) The cable network should not be confined to businesses and private homes. Franchise agreements should provide for the installation of cable links in public buildings, libraries, schools, post offices and information and advice centres. Our own experience of taking part in the Prestel for People project, which involves the installation of Prestel sets in public access points in three test towns, suggests that this should be an integral part of future developments.

SUPERVISORY FRAMEWORK

- 8.1 We have already made it clear that we do not see how the exercise of some regulatory functions can be avoided, certainly in relation to advertising, monopoly control and the maintenance of public service broadcasting - possibly also in relation to programme variety. The allocation of franchises could also form part of the functions of a regulatory body.
- 8.2 We recognise that if the franchises are to be local, there is a case for the bodies awarding the franchises also being local. The experience of the USA provides a precedent for this. However, we have some doubts about the appropriateness of local authorities as guardians of all aspects of the public interest in this context. Also, local authority boundaries may well not coincide with the most efficient franchise area boundaries.

8.3 While it would be vitally important to tap the vast (and different) experience of the BBC and IBA in any expansion of broadcasting via cable, their existing interests and responsibilities effectively preclude them from exercising the regulatory functions envisaged for cable. We therefore consider that a national cable commission should be established which would have the following functions:

- (a) Granting franchises;
- (b) Prevention of abuses of monopoly power;
- (c) Control of advertising: in this, there would be advantages to advertisers as well as to consumers in a close alignment of policy and practice between the cable commission and the IBA.

8.4 The national cable commission should also have responsibilities in respect of the non-broadcasting aspects of cable. As we have said before, in the longer term these may well be more important than the broadcasting aspects, although they fall outside the terms of reference of the inquiry.

8.5 We reiterate the need for a single Government Department to be responsible for all issues of broadcasting, including cable. The range and the importance of the issues involved justify a separate Ministerial responsibility.

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May 1982